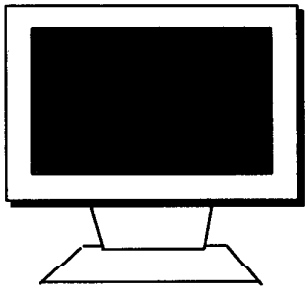
CPD-L133

SERVICE MANUAL

US Model
Canadian Model
AEP Model
Chassis No. SCC-G25C-A



SPECIFICATIONS

LCD panel	Panel type: a-Si TFT Active matrix Picture size: 13.3 inches
Input signal format	RGB operating frequency: fh: 15.625 KHz (625 interlace signal) 15.75 KHz (525 interlace signal) 30~70 KHz fv: 50~85 Hz
Pixel efficiency	99.99%
Resolution	H: max 1024 dots V: max 768 lines
Power requirements	Operation: AC 100~240 V, 50/60 Hz Input: DC 12 V (using the AC adaptor)
Power consumption	Display only: Max. 30W Including the AC adaptor: Max. 42 W
Dimensions	Including the stand: Approx. 373 x 358 x 165 mm (w/h/d) (14.73 x 14.06 x 6.5 in.) Monitor only: Approx. 373 x 272 x 71 mm (w/h/d) (14.73 x 10.7 x 2.8 in.)
Mass	Approx. 4.9kg (11 lb) including the stand

Design and specifications are subject to change without notice.

TFT LCD COLOR COMPUTER DISPLAY

SONY®

Owner's Record

The model and serial numbers are located at the rear of the unit. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.
Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

INFORMATION
This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPR II) for very low frequency (VLF) and extremely low frequency (ELF).

INFORMATION
Ce produit est conforme aux normes du Swedish National Council for Metrology de décembre 1990 (MPR II) en ce qui concerne les fréquences très basses (VLF) et extrêmement basses (ELF).

Hinweis
Dieses Gerät erfüllt bezüglich tieffrequenter (very low frequency) und tiefstfrequenter (extremely low frequency) Strahlung die Vorschriften des „Swedish National Council for Metrology (MPR)" vom Dezember 1990 (MPR II).

INFORMACIÓN
Este producto cumple las normas del Consejo Nacional Sueco para Metrología (MPR) emitidas en diciembre de 1990 (MPR II) para frecuencias muy bajas (VLF) y frecuencias extremadamente bajas (ELF).

Dieses Garät entspricht den folgenden europäischen EMV-Vorschriften für Betrieb in Wohngebieten, gewerblicher Gebleten und Leichtindustriegebieten.

EN55022/1994 Klasse B
EN50082-1/1992
EN61000-3-2/1995

Hinweise

- Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).
- Aus ergonomischen Gründen (flimmern) sollten nur Darstellungen bei Vertikalfrequenzen ab 70 Hz (ohne Zeilensprung) verwendet werden.
- Die Konvergenz des Bildes kann sich auf Grund des Magnetfeldes am Ort der Aufstellung aus der korrekten Grundeinstellung verändern. Zur Korrektur empfiehlt es sich deshalb, die Regler an der Frontseite für Konvergenz so einzustellen, daß die getrennt sichtbaren Farblinien für Rot, Grün und Blau bei z.B. der Darstellung eines Buchstabens zur Deckung (Konvergenz) gelangen.
  Siehe hierzu auch die Erklärungen zu Konvergenz.

NOTICE

This notice is applicable for USA/Canada only.
If shipped to USA/Canada, install only a UL LISTED/CSA LABELLED power supply cord meeting the following specifications:

SPECIFICATIONS

Plug Type	Nema-Plug 5-15p
Cord	Type SVT or SJT, minimum 3 × 18 AWG
Length	Maximum 15 feet
Rating	Minimum 7 A, 125 V

NOTICE

Cette notice s'applique aux Etats-Unis et au Canada uniquement.
Si cet appareil est exporté aux Etats-Unis ou au Canada, utiliser le cordon d'alimentation portant la mention UL LISTED/CSA LABELLED et remplissant les conditions suivantes:

SPECIFICATIONS

Type de fiche	Fiche Nema 5-15 broches
Cordon	Type SVT ou SJT, minimum 3 × 18 AWG
Longueur	Maximum 15 pieds
Tension	Minimum 7 A, 125 V

As an ENERGY STAR Partner, Sony Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

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CPD-L133

TIMING CHART

PRESET MODE	MODE-1	MODE-2	MODE-3	MODE-4	MODE-5	MODE-6	MODE-7	MODE-8
SIGNAL MODE	PAL	NTSC	MCGA	VGA(graph)	VESA(75HZ)	VESA	VGA(TEXT)	VESA
RESOLUTION	6251	5251	640 X 350	640 x 480	640 X 480	640 X 480	720 X400	720 X 400
DOT CLOCK	4.43361875MHZ	3.579545MHZ	25.175MHZ	25.175MHZ	31.500MHZ	36.000MHZ	28.322MHZ	35.500MHZ
HORIZONTAL	usec	usec	usec	usec	usec	usec	usec	usec
H TOTAL	64.000	63.600	31.778	31.778	26.667	23.111	31.777	26.366
H SYNC	5.000	5.000	3.813	3.813	2.032	1.556	3.813	2.028
H BP	5.800	4.700	1.907	1.907	3.810	2.222	1.907	3.042
H ACTIVE	52.000	54.100	25.422	25.422	20.317	17.778	25.422	20.282
VERTICAL	msec	msec	msec	msec	msec	msec	msec	msec
V TOTAL	20.000	16.667	14.268	16.683	13.333	11.764	14.268	11.759
V SYNC	0.000	0.000	0.064	0.064	0.080	0.069	0.064	0.079
V BP	1.280	0.889	1.907	1.049	0.427	0.578	1.112	1.107
V ACTIVE	36.800	30.798	11.122	15.253	12.800	11.093	12.700	10.546
H/V POLARITY	N/N	N/N	P/N	N/N	N/N	N/N	N/P	N/P
PRESET MODE	MODE-9	MODE-10	MODE-11	MODE-12	MODE-13	MODE-14	MODE-15	MODE-16
SIGNAL MODE	VESA(60HZ)	VESA(75)	VESA	PMAC 16"	VESA(60HZ)	VESA(70HZ)	VESA(75HZ)	PMAC 19"
RESOLUTION	800 X 600	800 X 600	800 X 600	832 X 624	1024 X 768	1024 X 768	1024 X 768	1024 X 768
DOT CLOCK	40.000MHZ	49.500MHZ	56.250MHZ	57.285MHZ	65.000MHZ	75.000MHZ	78.750MHZ	80.000MHZ
HORIZONTAL	usec	usec	usec	usec	usec	usec	usec	usec
H TOTAL	26.400	21.333	18.631	20.11	20.667	17.707	16.660	16.600
H SYNC	3.000	2.000	1.138	1.117	2.092	1.813	1.219	1.200
H BP	2.200	3.232	2.702	3.91	2.462	1.920	2.235	2.050
H ACTIVE	20.000	16.162	14.222	14.524	15.754	13.653	13.003	12.800
VERTICAL	msec	msec	msec	msec	msec	msec	msec	msec
V TOTAL	16.579	13.333	11.756	13.413	16.666	14.272	13.328	13.346
V SYNC	0.000	0.000	0.056	0.06	0.124	0.106	0.050	0.500
V BP	0.607	0.448	0.503	0.784	0.600	0.513	0.466	0.498
V ACTIVE	15.840	12.800	11.179	12.549	15.880	13.599	12.795	12.749
H/V POLARITY	P/P	P/P	P/P	N/N	N/N	N/N	P/P	N/N
PRESET MODE	MODE-17	MODE-18	MODE-19	MODE-20	MODE-21	MODE-22	MODE-23	
SIGNAL MODE	VESA	VAIO(75HZ)	VAIO(88HZ)	VAIO(60HZ)	VAIO(60HZ)	VAIO(70HZ)	SVGA(87HZ)	
RESOLUTION	1024 X 768	720 X 480	848 X 480	720 X 480	848 X 480	640 X 400	800 X 600	
DOT CLOCK	94.500MHZ	35.573MHZ	49.824MHZ	31.505MHZ	38.338MHZ	25.180MHZ	57.299MHZ	
HORIZONTAL	usec	usec	usec	usec	usec	usec	usec	
H TOTAL	14.561	26.530	20.710	28.44	28.328	31.771	18.290	
H SYNC	1.000	2.000	2.410	1.269	3.130	2.542	1.117	
H BP	2.201	3.820	1.280	3.238	16.694	2.859	2.653	
H ACTIVE	10.836	21.797	17.020	22.854	22.120	25.417	13.960	
VERTICAL	msec	msec	msec	msec	msec	msec	msec	
V TOTAL	11.765	13.330	11.338	16.69	16.690	14.265	11.540	
V SYNC	0.000	0.000	0.065	0.057	0.085	0.065	0.055	
V BP	0.524	0.448	0.610	2.645	2.691	1.144	0.494	
V ACTIVE	11.183	12.746	9.940	13.651	13.600	12.708	10.970	
H/V POLARITY	P/P	N/N	N/N	N/N	N/N	N/N	P/P	

NOTE: MODE 18~22 are not instructed in the OPERATING INSTRUCTIONS manual.

Precautions

Installation

- Prevent internal heat build-up by allowing adequate air circulation. Do not place the monitor on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the monitor near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place the monitor near equipment which generates magnetism, such as a transformer or high voltage power lines.

Handling the LCD screen

- **Bright points of light (red, blue or green) may appear on the LCD screen. This is not a malfunction. The LCD screen is made with high-precision technology and more than 99.99 % of the picture element is intact. However, some of the picture element may not appear or some of the picture element may appear constantly.**
- Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the monitor by a window.
- Do not push or scratch the LCD screen. Do not place a heavy object on the LCD screen. This may cause the screen to lose uniformity.
- If the monitor is used in a cold place, a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- If a still picture is displayed for a long time, a residual image may appear. The residual image will eventually disappear.
- The screen and the cabinet become warm during operation. This is not a malfunction.

Replacement of the fluorescent tube

A specially designed fluorescent tube is installed as the lighting apparatus for this monitor. If the LCD screen becomes dark, unstable or does not turn on, replace the fluorescent tube with an new one. Consult your Sony dealer when replacing the fluorescent tube.

Maintenance

- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzine.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an antistatic solution or similar additive as this may scratch the screen's coating.

Transportation

- When you transport this monitor, grip the bottom of the screen firmly with both hands. If you drop the monitor, you may be injured or the monitor may be damaged.
- When you transport this monitor for repair or shipment, use the original carton and packing materials.

Warning on power connection

- Use an appropriate power cord for your local power supply.
  For the customers in the UK
  If you use the monitor in the UK, please use the supplied UK cable with the UK plug.

Examples of plug types

for 100 to 120 V AC | for 200 to 240 V AC | for 240 V AC only

The outlet should be installed near the equipment and be easily accessible.

Mounting on a wall or an arm

Ask a specialist to mount the monitor on a wall or an arm. Do not mount the monitor yourself.

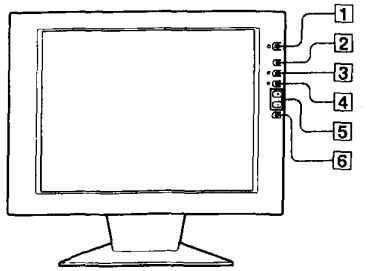
Disposal of the monitor

- **Do not dispose of the monitor with general waste.** Do not include the monitor with household waste.
- **The fluorescent tube includes mercury. Dispose of the monitor in accordance with the regulations of your local sanitation authority.**

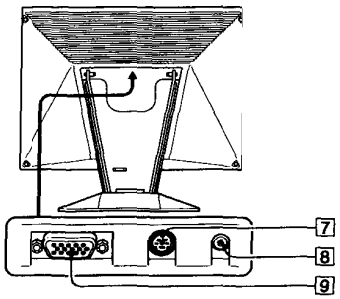
Identifying Parts and Controls

See the pages in parentheses for further details.
CPD-L150 is used for illustration purposes throughout this manual.

Front



Rear



1 ⏻ (power) switch and indicator (pages 8, 17)
Turns the monitor on or off.
The indicator lights up in green when the monitor is turned on, and either flashes in green and orange or lights up in orange when the monitor is in power saving mode.

2 MENU (menu) button (pages 8, 11 – 15, 17)
Displays the MENU OSD (On-Screen Display).

3 ☼ (brightness) (⇧) button (pages 8 – 9, 11 – 15)
Adjusts the picture brightness.

Functions as the ⇧ button when selecting menu items.

4 ◑ (contrast) (⇩) button (pages 8 – 9, 11 – 15)
Adjusts the contrast.

Functions as the ⇩ button when selecting menu items.

5 +/– (adjust) buttons (pages 9, 11 – 15)
Adjusts the selected menu item.

6 AUTO button (pages 8, 11)
After you have connected this monitor, press the AUTO button to automatically adjust the picture to the computer.
You also should press this button if the picture is not centered or if it is fuzzy.

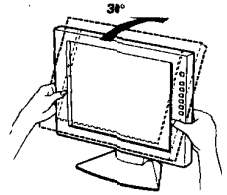
7 External control connector
Inputs the external control signal of ES-232 format. Consult your dealer for further information.

8 DC IN connector (page 6)
Provides DC power to the monitor from the AC adapter.

9 RGB input connector (HD15) (page 6)
Inputs analog RGB video signals (0.714 Vp-p, positive) and SYNC signals.

Use of the Tilt

Use the tilt feature to adjust the monitor to the desired angle within 30° vertically.
To turn the monitor vertically, hold it at the bottom with both hands as illustrated below.



EN

Setup

Before using this monitor, check that the following items are included in your carton:

- LCD monitor (1)
- AC adaptor (1)
- Rear cover (1)
- Power cord (1)
- HD15 video signal cable (1)
- Macintosh adapter (1)
- Windows Monitor Information Disk/Utility Disk (1)
- Macintosh Utility Disk (1)
- Warranty card (1)
- These operating instructions (1)

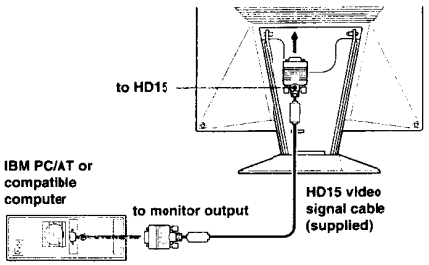
This monitor works with any IBM or compatible system equipped with VGA or greater graphics capability. Although this monitor works with other platforms running at horizontal frequencies between 30 and 70 kHz, including Macintosh and Power Macintosh systems, a cable adapter is required. Please consult your dealer for advice on which adapter is suitable for your needs. This monitor also can receive the RGB signals of the PAL and NTSC systems.

Step 1: Connect the monitor to the computer

With the computer switched off, connect the video signal cable to the monitor using the supplied HD15 video signal cable.

- If you are using an IBM PC/AT or compatible computer, refer to the section below.
- If you are using a Macintosh or compatible computer, refer to the following section, "Connecting to a Macintosh or compatible computer."

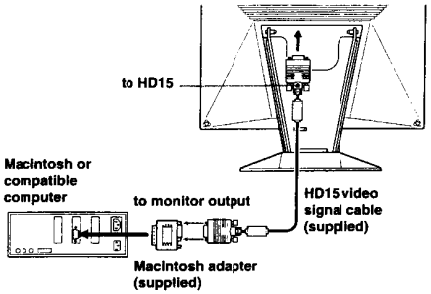
Connecting to an IBM PC/AT or compatible computer



If your PC system is not compatible with DDC1 and DDC2B

This monitor uses the No. 9 pin in the video signal connector for DDC1 and DDC2B compatibility.
Some PC systems which are not compatible with either DDC1 or DDC2B may not accept the No. 9 pin. If you are not sure whether your PC system accepts the No. 9 pin or not, use the HD15 (Female) - HD15 (Male without the No. 9 pin) adapter (not supplied). Make sure the male side (without the No. 9 pin) is connected to the computer.

Connecting to a Macintosh or compatible computer

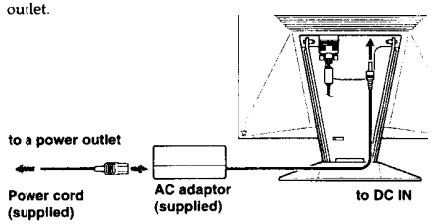


About the supplied Macintosh adapter

The supplied Macintosh adapter is compatible with Macintosh LC, Performa, Quadra and Power Macintosh series computers. Macintosh II series and some older versions of PowerBook models may need an adapter with micro switches (not supplied).

Step 2: Connect the power cord

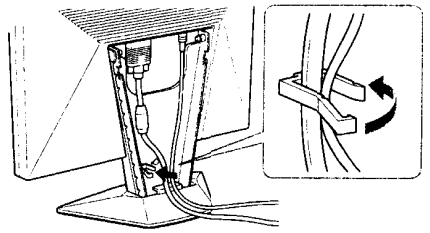
With the monitor switched off, connect one end of the DC power cord to the monitor and the other end to a power outlet.



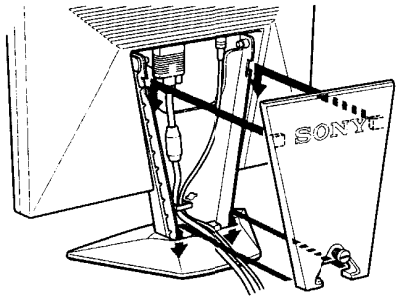
Step 3: Attaching the rear cover

After connecting the computer and power cord, attach the supplied rear cover.
Make sure that you keep the screen upright when attaching the rear cover.

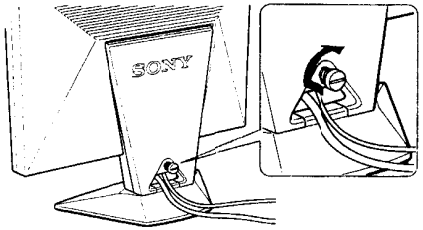
1 Hook the computer cable and power cord.

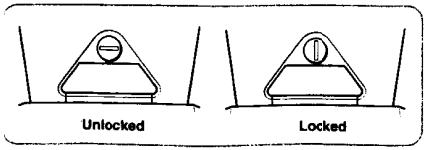


2 Insert the tabs on the back of the rear cover into the catches, and then push down.



3 Turn the screw to fasten the rear cover.





Step 4: Turning on the monitor and computer

First turn on the monitor, then turn on the computer.
The installation of your monitor is complete.

Note

If "OUT OF SCAN RANGE" or "NO INPUT SIGNAL" appears on the screen see "Warning Messages" on page 18.

For customers using Windows 95/98

To maximize the potential of your monitor, install the new model information file from the supplied Windows Monitor Information Disk/Utility Disk onto your PC.
This monitor complies with the "VESA DDC" Plug & Play standard. If your PC/graphics board complies with DDC, select "Plug & Play Monitor (VESA DDC)" or this monitor's model name as the monitor type in the "Control Panel" of Windows 95/98. If your PC/graphics board has difficulty communicating with this monitor, load the Windows Monitor Information Disk/Utility Disk and select this monitor's model name as the monitor type.

For customers using Windows NT4.0

Monitor setup in Windows NT4.0 is different from Windows 95/98 and does not involve the selection of monitor type. Refer to the Windows NT4.0 instruction manual for further details on adjusting the resolution, refresh rate, and number of colors.

EN

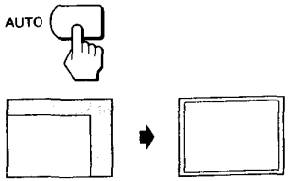
Automatically Adjusting the Picture

If the picture is flickering or fuzzy, press the AUTO button. The monitor is automatically adjusted to match the signal from the connected computer.
Further fine adjustments may be needed with some computers. In this case, manually adjust the monitor by referring to "Customizing Your Monitor" on page 9.

1 Turn on the monitor.

2 Turn on the computer.

3 Press the AUTO button.
The picture is adjusted to fit the center of the screen.



Notes

- This function is intended for use with a computer running Windows or similar graphic user interface software that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges (such as an MS-DOS prompt).
- The screen may go blank for a few seconds while performing the auto-sizing function. This is not a malfunction.

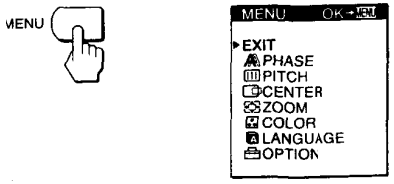
If the picture is flickering or fuzzy even after you press the AUTO button

Adjust the Pitch and Phase manually (page 11).

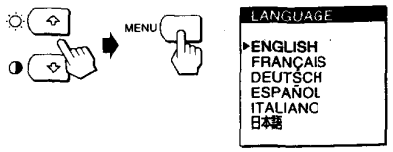
Selecting the On-Screen Display Language

You can select the OSD language from English, French, German, Spanish, Italian, and Japanese.

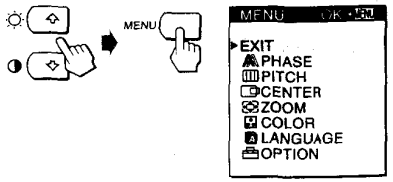
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select LANGUAGE, and press the MENU button.
The LANGUAGE OSD appears.



3 Press the ⇧/⇩ buttons to select the desired language, and press the MENU button.
The MENU OSD of the selected language appears.



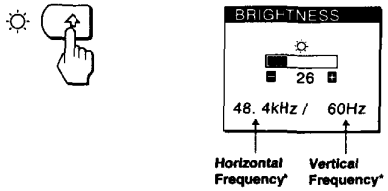
The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

Before adjusting
Connect the monitor and the computer, and turn them on.
Wait for at least 30 minutes before making adjustments for the best result.

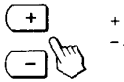
Adjusting the Picture Brightness

Once the brightness is adjusted, it will be stored in memory for all input signals received.

1 Press the ☼ (brightness) ⇧ button.
The BRIGHTNESS OSD appears.



2 Press the +/– buttons.



+ . . . for more brightness
– . . . for less brightness

The OSD automatically disappears after about 3 seconds.

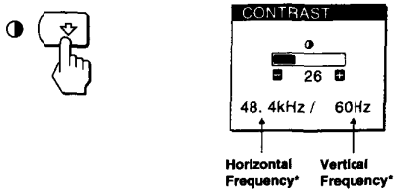
* The horizontal and vertical frequencies for the received input signal appear in the BRIGHTNESS OSD.

If the screen is too bright when using the monitor in a dark room
Decrease the BACKLIGHT (page 14).

Adjusting the Contrast

Once the contrast is adjusted, it will be stored in memory for all input signals received.

1 Press the ◑ (contrast) ⇩ button.
The CONTRAST OSD appears.



2 Press the +/– buttons.

+ . . . for more contrast
– . . . for less contrast

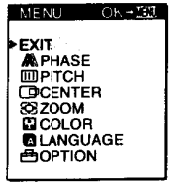
The OSD automatically disappears after about 3 seconds.

* The horizontal and vertical frequencies for the received input signal appear in the CONTRAST OSD.

EN

Introducing the On-Screen Display System

Most adjustments are made using the MENU OSD.
To change the on-screen display language, see "Selecting the On-screen Display Language" (page 8).



EXIT
Closes the MENU OSD.

PHASE
Displays the PHASE OSD. Adjust the phase when the characters or pictures appear fuzzy throughout the entire screen. Adjust the phase after adjusting the pitch.

PITCH
Displays the PITCH OSD. Adjust the pitch when the characters or pictures are not clear at some parts of the screen.

CENTER
Displays the CENTER OSD for adjusting the centering of the picture.

ZOOM
Displays the ZOOM OSD for selecting the picture's display mode. Select FULL MODE to display the picture using the entire screen, or select REAL MODE to display the picture at its actual resolution.

COLOR
Displays the COLOR OSD for adjusting the color temperature.

LANGUAGE
Displays the LANGUAGE OSD for selecting the on-screen display language.

OPTION
Displays the OPTION OSD. You can adjust settings such as the backlight, OSD position, power saving delay time and control lock.

Using the Utility Disk

The supplied Utility Disk contains test patterns to be used for Pitch, Phase, and Centering adjustments.
These test patterns will help you confirm that your adjustments are correct.

Pitch adjustment
Adjust the Pitch if vertical stripes appear on the screen, or a part of the screen flickers or blurs.
Adjust the screen so that the bold vertical lines of the test pattern disappear.

Phase adjustment
Adjust the Phase if the entire screen flickers or blurs, or if horizontal stripes are observed on the screen.
Adjust the screen until the horizontal stripes are at a minimum.

Centering adjustment
Adjust the Centering if the picture is not centered.
Move the picture up, down, left, or right until the red frame at the perimeter of the test pattern disappears.

Using the test pattern

1 Set ZOOM to REAL MODE (page 12).

2 Load the supplied Utility Disk and display the test pattern.
Use the appropriate disk for your computer.
For Windows 95/98
Windows Monitor Information Disk / Utility Disk
For Macintosh
Macintosh Utility Disk

3 Select the pitch, phase, or centering from the monitor's MENU OSD, and adjust the screen while viewing the test pattern (pages 11, 12).

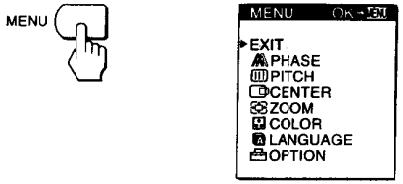
4 When you have finished, click END on the screen to turn off the test pattern.

Eliminating Flickering or Blurring

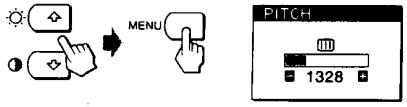
If a part of the screen is flickering or blurring, press the AUTO button. If this operation does not work, adjust the Pitch and Phase as follows.
Once the pitch and phase are adjusted, they will be stored in memory for the current input signal.

1 Load the Utility Disk (page 10).

2 Press the MENU button
The MENU OSD appears.



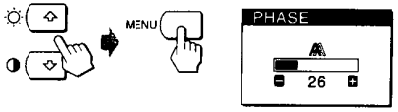
3 Press the ⇧/⇩ buttons to select PITCH, and press the MENU button again.
The PITCH OSD appears.



4 Press the +/– buttons until the screen color becomes uniform.
If you are using the Utility Disk, adjust so that the vertical stripes disappear.

5 Press the MENU button.
The MENU OSD appears.
If horizontal stripes are observed over the entire screen, adjust the Phase in the next step.

6 Press the ⇧/⇩ buttons to select PHASE, and press the MENU button again.
The PHASE OSD appears.



7 Press the +/– buttons until the screen color becomes uniform.
If you are using the Utility Disk, adjust until the horizontal stripes are at a minimum.

The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

To turn off the test pattern, click END on the screen.

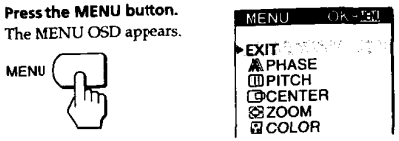
EN

Adjusting the Picture Position

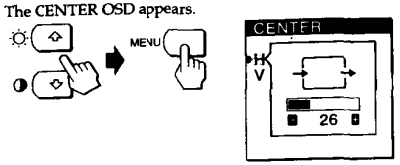
If the picture is not in the center of the screen, press the AUTO button. If this operation does not work, adjust the centering as follows.
Once the centering is adjusted, it will be stored in memory for the current input signal.

1 Load the Utility Disk (page 10).

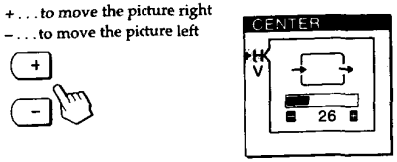
2 Press the MENU button.
The MENU OSD appears.



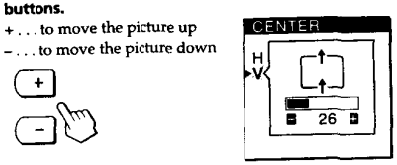
3 Press the ⇧/⇩ buttons to select CENTER, and press the MENU button again.
The CENTER OSD appears.



4 For horizontal adjustment, select H using the ⇧/⇩ buttons and adjust the position using the +/– buttons.
+ . . . to move the picture right
– . . . to move the picture left



For vertical adjustment, select V using the ⇧/⇩ buttons and adjust the position using the +/– buttons.
+ . . . to move the picture up
– . . . to move the picture down



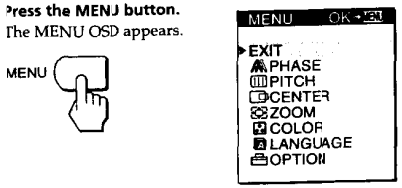
The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

To turn off the test pattern, click [END] on the screen.

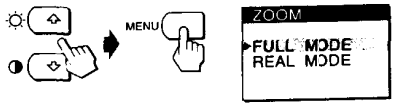
Displaying the Picture at the Actual Resolution

The monitor is set at the factory to display the picture on the screen in full, irrespective of the picture's resolution. You can also view the picture at its actual resolution.
Once the zoom is set, it will be stored in memory for the current input signal.

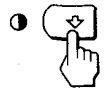
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select ZOOM, and press the MENU button again.
The ZOOM OSD appears.



3 Press the ⇩ button to select REAL MODE, and press the MENU button again.
The MENU OSD appears.



The OSD automatically disappears after about 30seconds.
To close the OSD, press the MENU button again.

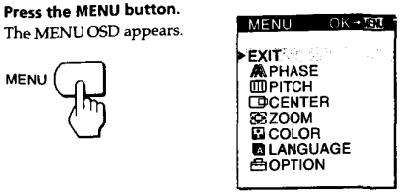
To display the picture on the screen in full

Press the ⇧ button in step 3 to select FULL MODE.

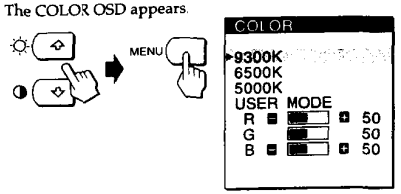
Changing or Adjusting the Color Temperature

The color temperature is set to 9300K at the factory.
You can change the color temperature to 6500K or 5000K. Use this function to adjust the color temperature so that it matches the actual colors of a printed picture.
Once the color temperature is adjusted, it will be stored in memory for all input signals received.

1 Press the MENU button.
The MENU OSD appears.

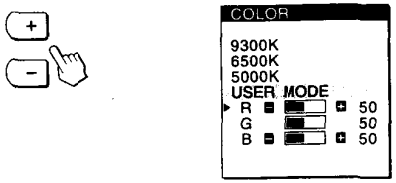


2 Press the ⇧/⇩ buttons to select COLOR, and press the MENU button again.
The COLOR OSD appears.



3 Press the ⇧/⇩ buttons to select the color temperature.
If you need to make further adjustments to the selected color tempeature, go to step 4.
If you don't, press the MENU button. The MENU OSD appears.

4 Press the ⇧/⇩ buttons to select R (red) or B (blue), and press the +/– buttons to get the desired color.
The color changes as the R or B componerts increase or decrease with respect to G (green).

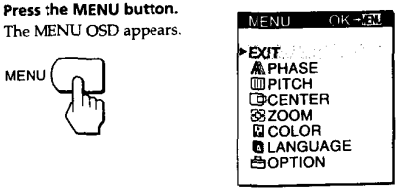


The OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

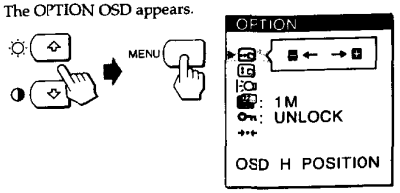
Changing the On-Screen Display Position

You can change the OSD position (for example, when you want to adjust the picture behind the OSD).

1 Press the MENU button.
The MENU OSD appears.

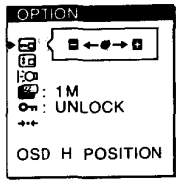


2 Press the ⇧/⇩ buttons to select OPTION, and press the MENU button again.
The OPTION OSD appears.

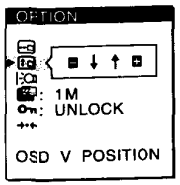


3 Press the ⇧/⇩ buttons to select [OSD H POSITION] or [OSD V POSITION].

To adjust the horizontal position



To adjust the vertical position



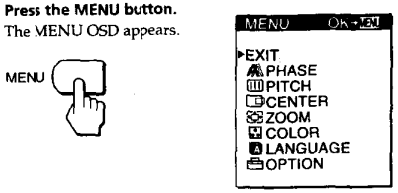
4 Press the +/– buttons to move the OSD to the desired position.

The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

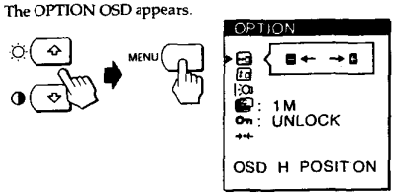
Adjusting the Backlight

If the screen is too bright when you are using the monitor in a dark room, adjust the backlight.

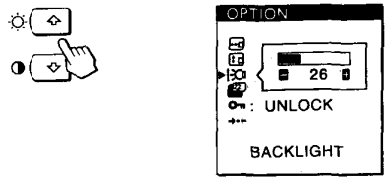
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select OPTION, and press the MENU button again.
The OPTION OSD appears.



3 Press the ⇧/⇩ buttons to select (BACKLIGHT).



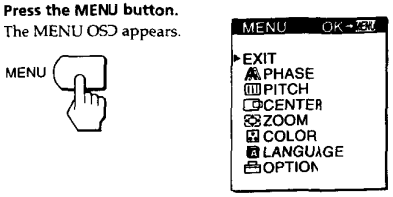
4 Press the +/– buttons to adjust the light level.

The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

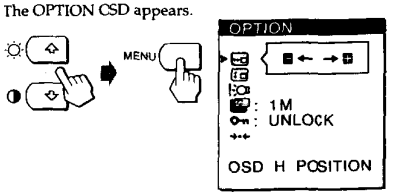
Setting the Power Saving Delay Time

You can set the delay time before the monitor enters the power saving mode. See page 17 for more information on this monitor's power saving capabilities.

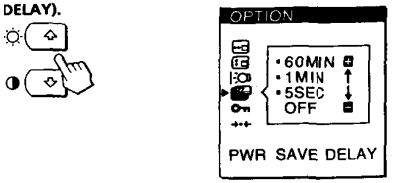
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select OPTION, and press the MENU button again.
The OPTION OSD appears.



3 Press the ⇧/⇩ buttons to select (PWR SAVE DELAY).



4 Press the +/– buttons to select the desired tme.

When PWR SAVE DELAY is set to OFF, the monitor does not go into power saving mode.

The OPTION OSD automatically cisappears after about 30 seconds.
To close the OSD, press the MENU button again.

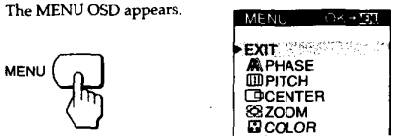
Locking the Controls

The control lock function disables all of the controls except the ⏻ (power) switch and MENU button.

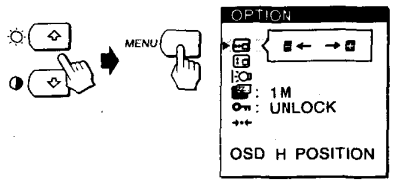
Once you select "LOCK," you can select only the following items in the MENU OSD:
- EXIT
- CONTROL LOCK and FACTORY PRESET in the OPTION OSD

If you press any locked button, the mark appears on the screen.

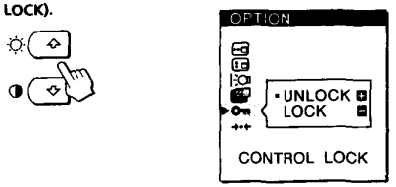
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select OPTION, and press the MENU button again.
The OPTION OSD appears.



3 Press the ⇧/⇩ buttons to select (CONTROL LOCK).



4 Press the – button to select LOCK.

The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

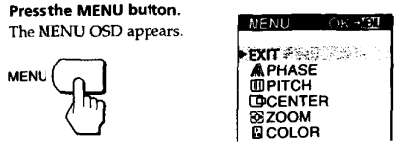
To cancel the control lock

Press the + button in step 4 to select UNLOCK.

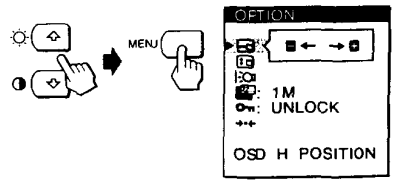
Resetting the Adjustments

You can reset all of the adjustments and settings to the factory settings.
The color temperature is reset to 9300K, the zoom setting is reset to full mode, and the power saving delay time is reset to one minute. The control lock is canceled. All other adjustments return to the default settings. The on-screen language, however, does not change.

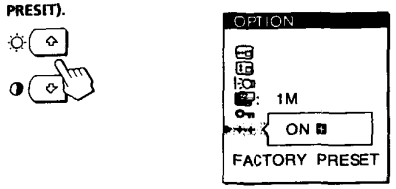
1 Press the MENU button.
The MENU OSD appears.



2 Press the ⇧/⇩ buttons to select OPTION, and press the MENU button again.
The OPTION OSD appears.



3 Press the ⇧/⇩ buttons to select (FACTORY PRESET).



4 Press the + button.

The OPTION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

EN

Preset and User Modes

This monitor has factory preset modes for the most popular industry standards for true "plug and play" compatibility.

When a new input signal is entered, the monitor selects the appropriate factory preset mode and momentarily adjusts the phase calibration to provide a high quality picture to the center of the screen. The calibration is stored in memory and is immediately recalled whenever the same input signal is received.

No.	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	—	15.625 kHz	50 Hz	625I
2	—	15.75 kHz	60 Hz	525I
3	640 × 350	31.5 kHz	70 Hz	MCCA
4	640 × 400	31.5 kHz	70 Hz	NECPC-98
5	640 × 480	31.5 kHz	60 Hz	VGA-G
6	640 × 480	35.0 kHz	67 Hz	Macintosh 13" color
7	640 × 480	37.5 kHz	75 Hz	EVGA
8	640 × 480	43.3 kHz	85 Hz	VESA
9	720 × 400	31.5 kHz	70 Hz	VGA-Text
10	720 × 400	37.9 kHz	85 Hz	VESA
11	800 × 600	37.9 kHz	60 Hz	SVGA
12	800 × 600	46.9 kHz	75 Hz	ESVGA
13	800 × 600	53.7 kHz	85 Hz	VESA
14	832 × 624	49.7 kHz	75 Hz	Macintosh 16" color
15	1024 × 768	48.4 kHz	60 Hz	VESA
16	1024 × 768	56.5 kHz	70 Hz	VESA
17	1024 × 768	60.0 kHz	75 Hz	EUVGA
18	1024 × 768	60.2 kHz	75 Hz	Macintosh 19" Color
19	1024 × 768	68.7 kHz	85 Hz	VESA

For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor performs all of the adjustments necessary to ensure that a clear picture appears on the screen for any timing in the monitor's frequency range. However, it may be necessary to fine tune the vertical/horizontal centering. Simply press the AUTO button or adjust the monitor according to the adjustment instructions. The adjustments are stored automatically as a user mode and recalled whenever the corresponding input signal is received.

Recommended horizontal and vertical timing conditions

Horizontal sync width duty should be 4.8% or higher of total horizontal time.
Horizontal blanking width should be 2.5 μsec. or higher.
Vertical blanking width should be 450 μsec. or higher.

Adjusting the monitor's resolution and color number

Adjust the monitor's resolution and color number by referring to your computer's instruction manual. The color number may vary according to your computer or video board. The color palette setting and the actual number of colors are as follows:

- High Color (16 bit) → 65,536 colors
- True Color (24 bit) → about 16.77 million colors

In true color mode (24 bit), speed may be slower.

Power Saving Function

This monitor meets the power-saving guidelines set by VESA and ENERGY STAR, as well as the more stringent NUTEK.
If the monitor is connected to a computer or video graphics board that is VESA DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

You can set the delay time before the monitor enters the power saving mode using the OSD. Set the time according to "Setting the Power Saving Delay Time" on page 14.

Note

If no video signal is input to the monitor, the "NO INPUT SIGNAL" message (page 18) appears. After the delay time has passed, the power saving function automatically puts the monitor into the active-off mode and the ⏻ indicator lights up orange. Once the horizontal and vertical sync signals are detected, the monitor automatically resumes its normal operation mode.

Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ Indicator
1 Normal operation	active	present	present	CPD-L133 ≤ 30 W* ≤ 42 W** CPD-L150 ≤ 25 W* ≤ 35 W**	—	Green
2 Standby (1st mode)	blank	absent	present	CPD-L133 ≤ 1.5 W* ≤ 4 W** CPD-L150 ≤ 1.5 W* ≤ 4 W**	Approx. 3 sec.	Green and orange alternate
3 Suspend (2nd mode)	blank	present	absent	CPD-L133 ≤ 1.5 W* ≤ 4 W** CPD-L150 ≤ 1.5 W* ≤ 4 W**	Approx. 3 sec.	Green and orange alternate
4 Active-off (3rd mode)	blank	absent	absent	CPD-L133 ≤ 1.5 W* ≤ 4 W** CPD-L150 ≤ 1.5 W* ≤ 4 W**	Approx. 10 sec.	Orange
5 Power-off	—	—	—	CPD-L133 ≤ 1.5 W* ≤ 4 W** CPD-L150 ≤ 1.5 W* ≤ 4 W**	—	Off

* Power consumption of the monitor only
** Power consumption of the monitor including the AC adaptor

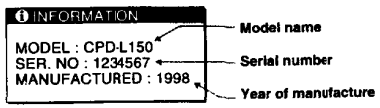
EN

Displaying the INFORMATION OSD

You can confirm the name, the serial number and the year of manufacture of this monitor.

Press and hold the MENU button for five seconds.
The INFORMATION OSD appears.

Example



The INFORMATION OSD automatically disappears after about 30 seconds.
To close the OSD, press the MENU button again.

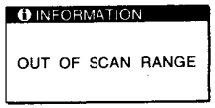
Plug & Play

This monitor complies with the DDC™1 and DDC2B Display Data Channel (DDC) standards of VESA.
When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.

DDC™ is a trademark of the Video Electronics Standard Association.

Warning Messages

If there is something wrong with the input signal, one of the following messages appears.



"OUT OF SCAN RANGE" indicates that the input signal is not supported by the monitor's specifications.

"NO INPUT SIGNAL" indicates that no signal is input.

To solve these problems, see "Troubleshooting" below.

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

Symptom	Check these items
No picture	
If the ⏻ indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) switch is in the "on" position.
If the "NO INPUT SIGNAL" message appears on the screen, or if the ⏻ indicator is orange	• The screen is blank when the monitor is in power saving mode. Try pressing any key on the computer keyboard. • Check that your computer power switch is in the "on" position. • Check that the input select setting is correct. • Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets. • Check the HD15 video input connector to ensure that no pins are bent or pushed in.
If the "OUT OF SCAN RANGE" message appears on the screen	• Check that the video frequency range is within that specified for the monitor. Horizontal: 30 – 70 kHz, Vertical: 50 – 85 Hz Refer to your computer's instruction manual to adjust the video frequency range. • If you are using a video signal cable adapter, check that it is correct.
If using a Macintosh system	• Check that the Macintosh adapter and the video signal cable are properly connected (page 6).
If using Windows 95/98	• If you replaced an old monitor with this monitor, reconnect the old monitor and do the following. Install the Windows Monitor Information Disk/Utility Disk (page 7) and select "CPD-L133 or CPD-L150" from among the Sony monitors in the Windows 95/98 moritor selection screen.
Picture is dark.	• Adjust the backlight (page 14). • Adjust the brightness (page 9). • It takes several secords for the monitor to warm up after the power is turned on. The picture will appear momentarily.
Picture is scrambled.	• Press the AUTO button (page 8). If this does not work, adjust the pitch and phase (page 11). • Check this manual and confirm that the graphics mode and the frequency you are trying to operate at is supported. Even if the frequency is within the proper range, some computers may have a sync pulse that is too narrow for this monitor to sync correctly.

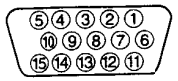
Symptom	Check these items
Color is not uniform.	• Press the AUTO button(page 8). If this does not work, adjust the pitch and phase (page 11).
You cannot adjust the monitor with the buttons on the front panel.	• If the control lock function is set to on, set it to off using the OPTION OSD (page 15).
White does not look white.	• Adjust the color temperature (page 13).
Screen image is not centered.	• Press the AUTO button (page 8). • Adjust the centering (page 12). • Some video modes do not fill the screen to the edges. This problem tends to occur with certain video boards.
The picture size is incorrect.	• Check the ZOOM setting (page 12).
Picture is fuzzy	• Press the AUTO button(page 8). If this does not work, adjust the pitch and phase (page 11). • Adjust the contrast and brightness (page 9).
Picture bounces or has wavy oscillations	• Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try the monitor on a different computer in a different room.
Picture is flickering	• Press the AUTO button(page 8). If this does not work, adjust the pitch and phase (page 11).
Picture appears to be ghosting	• Eliminate the use of video cable extensions and/or video switch boxes if this symptom occurs. Excessive cable length or a weak connection can produce this symptom.
Wavy or elliptical (moire) pattern is visible	• Press the AUTO button(page 8). If this does not work, adjust the pitch and phase (page 11).

EN

Specifications

LCD panel	Panel type: a-Si TFT Active Matrix CPD-L133 Picture size: 13.3 inches CPD-L150 Picture size: 15.0 inches
Input signal format	RGB operating frequency: fh: 15.625 kHz (625 interlace signal) 15.75 kHz (525 interlace signal) 30 – 70 kHz fv: 50 Hz — 85 Hz
Pixel efficiency	99.99 %
Resolution	H: max 1024 dots V: max. 768 lines
Power requirements	Operation: AC 100 – 240 V, 50 – 60 Hz Input: DC 12 V (using the AC adaptor)
Power consumption	CPD-L133 Display only Max. 30 W Including the AC adaptor: Max. 42 W CPD-L150 Display only Max. 25 W Including the AC adaptor: Max. 35 W
Dimensions (w/h/d)	CPD-L133 Including the stand: Approx. 373 × 358 × 165 mm (14 3/4 × 14 1/8 × 6 1/2 in.) Monitor only: Approx. 373 × 272 × 71 mm (14 3/4 × 10 3/4 × 2 7/8 in.) CPD-L150 Including the stand: Approx. 398 × 366 × 165 mm (15 3/4 × 14 1/2 × 6 1/2 in.) Monitor only: Approx. 398 × 291 × 71 mm (15 3/4 × 11 1/2 × 2 7/8 in.)
Mass	CPD-L133 Approx. 4.9 kg (10 lb 12 oz) including the stand CPD-L150 Approx. 5.3 kg (11 lb) including the stand
Supplied accessories	See page 6.

Pin assignment



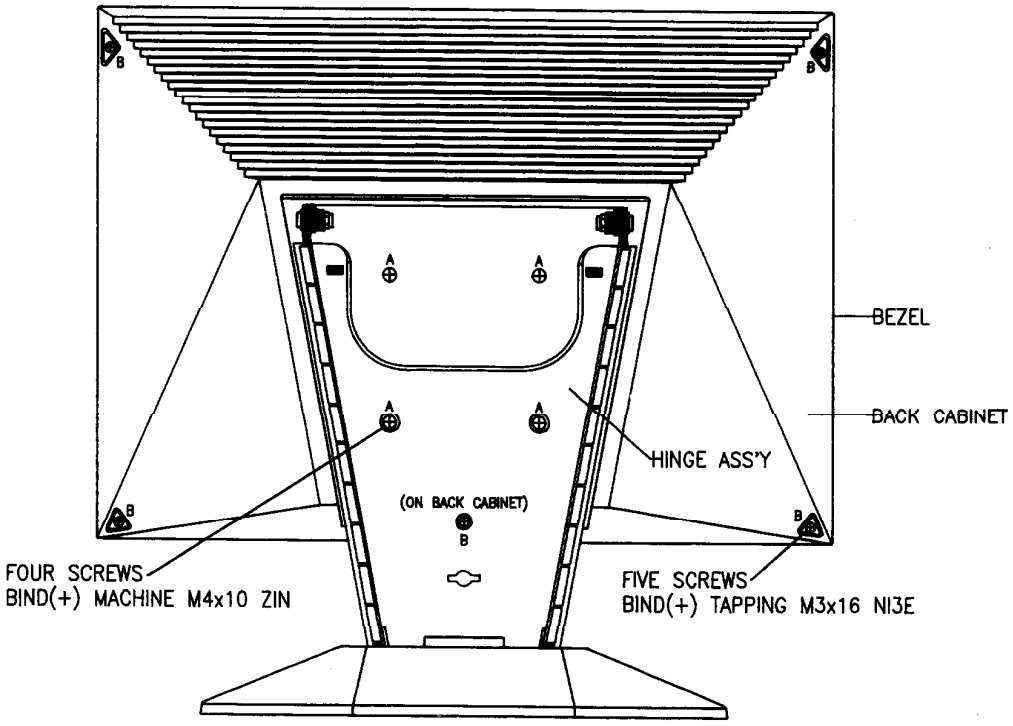
Pin No.	Signal	Pin No.	Signal
1	Red	8	Blue Ground
2	Green (Composite Sync on Green)	9	DDC + 5V*
		10	Ground
		11	ID (Ground)
3	Blue	12	Bi-Directional Data (SDA)*
4	ID (Ground)		
5	DDC Ground*	13	H. Sync
6	Red Ground	14	V. Sync
7	Green Ground	15	Data Clock(SCL)*

* Display Data Channel (DDC) Standard of VESA

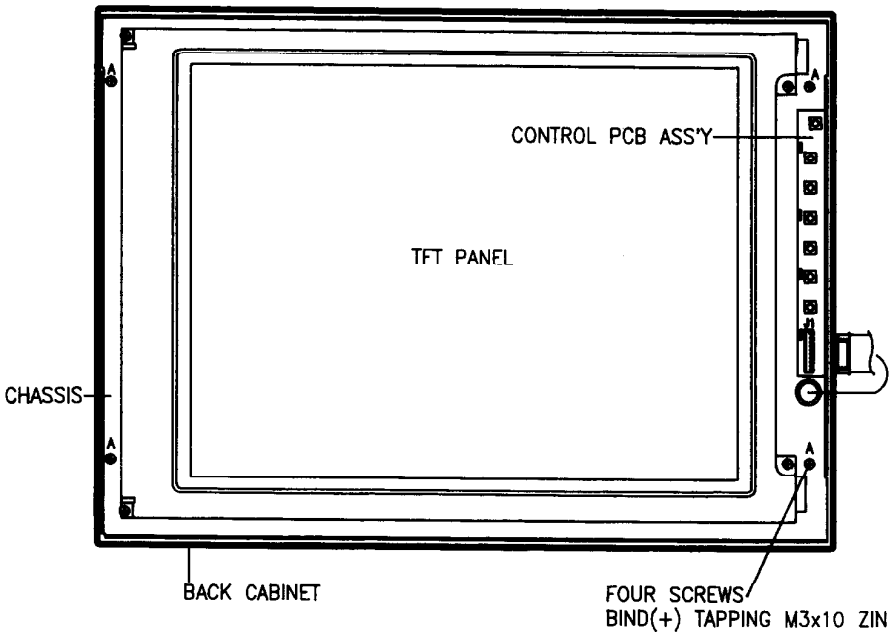
Design and specifications are subject to change without notice.

SECTION 2
DISASSEMBLY

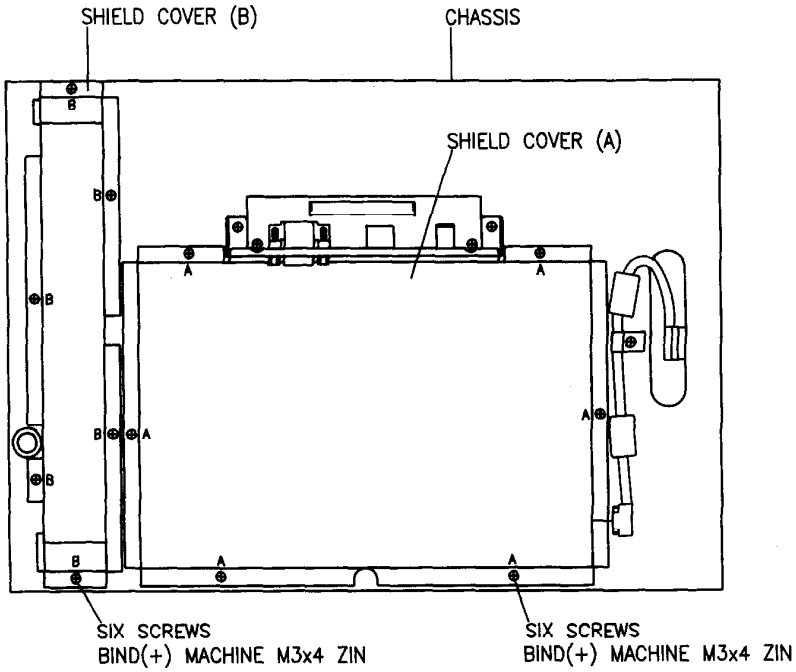
2-1. HINGE ASS'Y, BEZEL REMOVAL



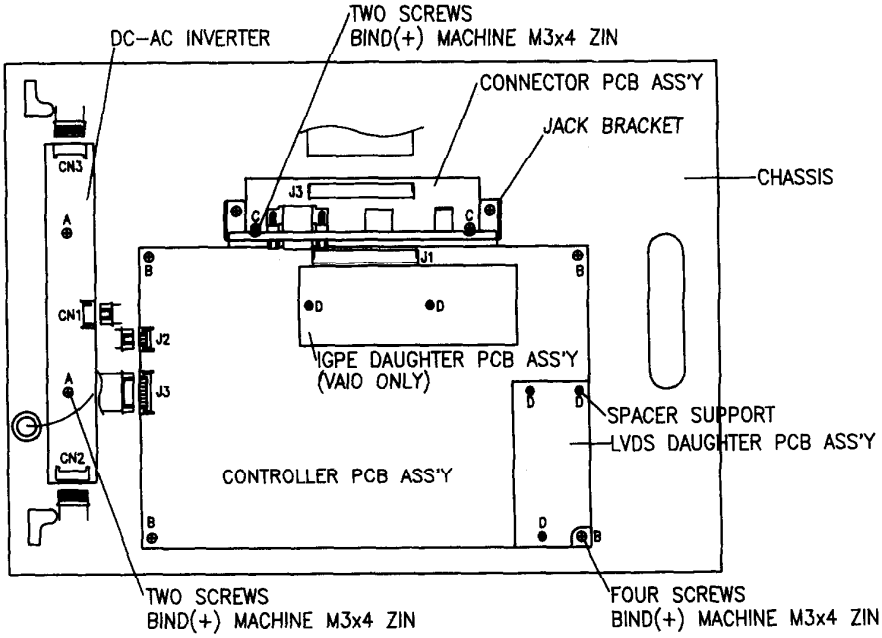
2-2. BACK CABINET, CONTROL PCB REMOVAL



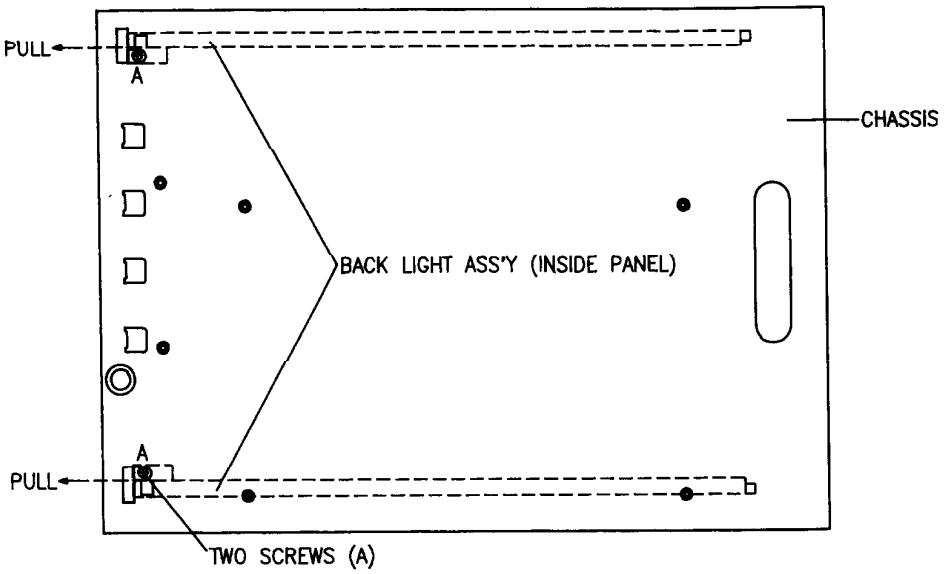
2-3. SHIELD COVERS REMOVAL



2-4. PCB REMOVAL



2-5. BACK LIGHTS REMOVAL



SECTION 3
ALIGNMENT PROCEDULE

This paper documents the functional alignment procedure of Sony flat panel monitor CPD-L133.

Revision

Preliminary release Rev 1.0 Date of revision: Sep 24, 1998

Equipment

Computer:	PC workstation with Windows 95 installed PS/2 mouse is required
Software:	Capetronic engineering alignment software tool
Color meter:	Option
Signal generator:	Option
Cable:	Special RS232 interface cable

Setup

1. Copy Capetronic software <ALIGN.EXE> into a new PC directory.
2. Prepare timing & pattern data for signal generator according to Sony's timing specifications.
3. Prepare timing files for <ALIGN.EXE>.
4. Connect monitor interface cable between flat panel monitor and PC COM port.
5. Connect monitor video cable to signal generator.
6. Put Topcon BM7 40cm from the UUT; Point it perpendicularly at the center of the display; Achieve the best focus through the eyepiece.
7. Enclose the UUT & Topcon BM7 in a light-shielded chamber.

Software Setup

1. Execute software <ALIGN.EXE>.
2. Click on [Setup] menu.
3. Select [Monitor] type as [CPD-L133]; select 'Color Analyzer' & 'Video Signal Generator'.
4. Select [COM PORT] according to hardware connection.
5. Click [OK] to save the new setup configuration.
6. Quit this application and Re-enter to make the new settings effective.

On Screen Adjustment

1. Click on the [Monitor] icon; an virtual monitor panel would show up.
2. On entry, the software tries to establish a communication link with the monitor. The monitor internal DACs are read and shown on screen sliders. A [CONNECT] icon would show up on the lower left corner of the dialog screen.
3. An error message would pop up should communication fail. A [BREAK] icon would show up on the dialog screen. If this happens, check the hardware setup, communication cable, and the connection.

Warm up time

Allow 30 minutes warm up time before doing any adjustment.

Adjustment procedure

Step 1 - IGPE daughter board Adjustment (VAIO model only)

- Download the initial data as follows:

Normal	= 0
Normal contrast min.	= 80
Normal contrast max.	=132
IGPE	=122
IGPE Contrast min.	=100
IGPE Contrast max.	=132
R	=200
B	=200
G	=200
Brightness	=200

Step 2 - IGPE daughter board Adjustment (VAIO model only)

Adjust IGPE color balance R gain drv, G gain drv, B gain drv according to Sony alignment procedure. Signal levels of IC MM1382 pins 23, 20, & 18 should be same.

Step 3 (VAIO model, White model)

- Set up Video 100% IRE.
- Adjust [Brightness] control to [Max].
- Adjust [Contrast] control to [Max].
- Measure [Luminance] as A.
- Perform [Monitor reset]. i.e. Brightness 50%, Contrast 70%.
- Adjust [Contrast] to [A-10 +/- 8] cd/m2.
- Click [Contrast save].

Step 4 (VAIO model, White model)

- Set up Video 60% IRE.
- Keep [SUB_BRT_G] as 148, unchanged.
- Adjust [SUB_BRT_R] & [SUB_BRT_B] for 9300K, refer to Table 2 for color specifications.
- Click [Color save].

Step 5 (VAIO model, White model)

- Repeat step 4 for 6500K & 5000K.

Step 6 (VAIO model, White model)

- Increase [Contrast] 2 steps.
- Click [Contrast save].

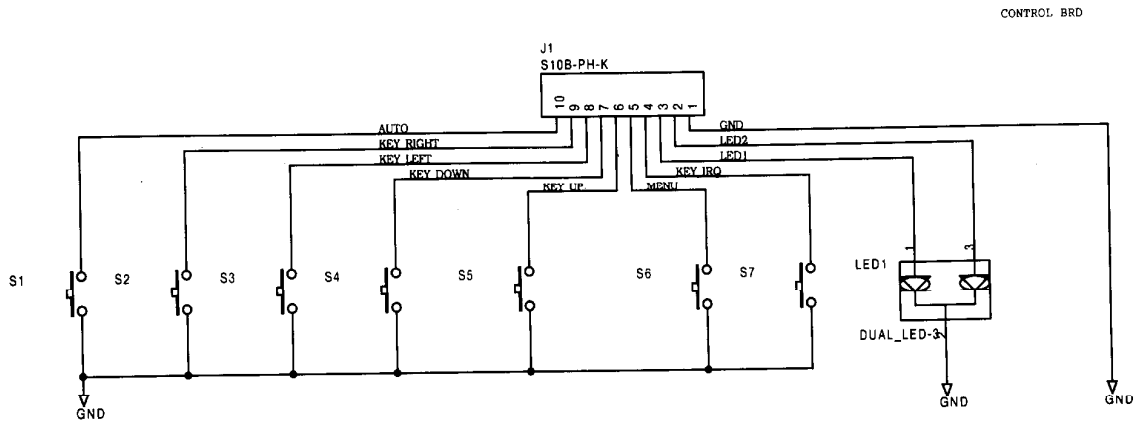
Table 1: Initial data for color adjustment (VAIO model, White model)

Color		9300K			6500K			5000K	
Condition	Min	Center	Max	Min	Center	Max	Min	Center	Max
Brightness(G)	50	148	255	50	148	255	50	148	255
Contrast(G)	20	46	70	20	46	70	20	46	70
Sub-Brt-R	NA	157	NA	NA	165	NA	NA	173	NA
Sub-Brt-B	NA	178	NA	NA	142	NA	NA	105	NA
Sub-Cont-R	NA	46	NA	NA	46	NA	NA	46	NA
Sub-Cont-B	NA	46	NA	NA	46	NA	NA	46	NA

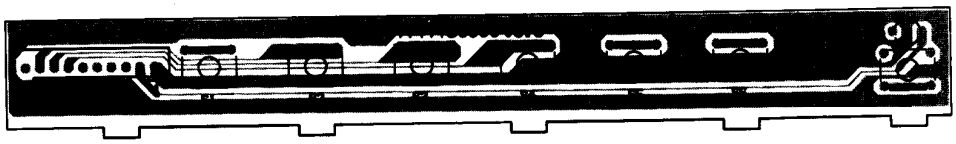
Table 2: Specifications for Color adjustment (VAIO model, White model)

Color	x	y
9300	283	298
6500	314	328
5000	345	358
Tole	5	5

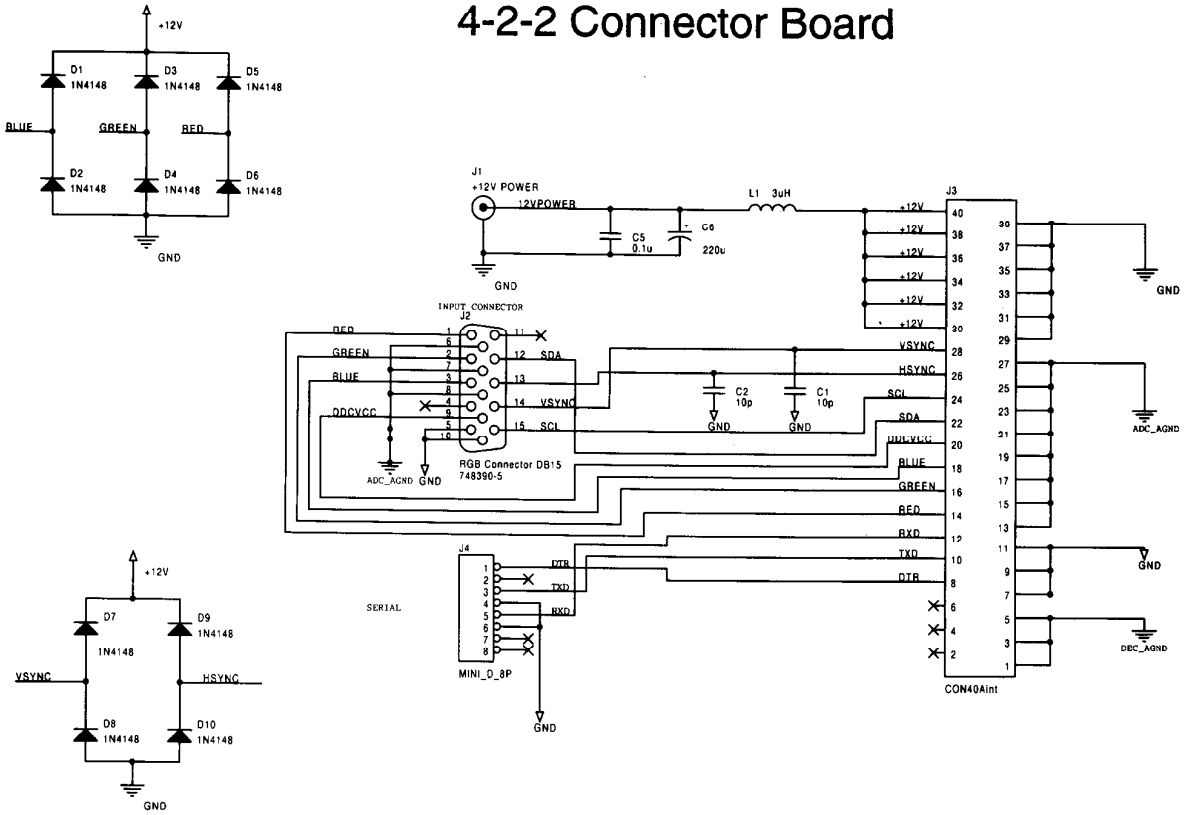
4-2-1 Control Panel Board



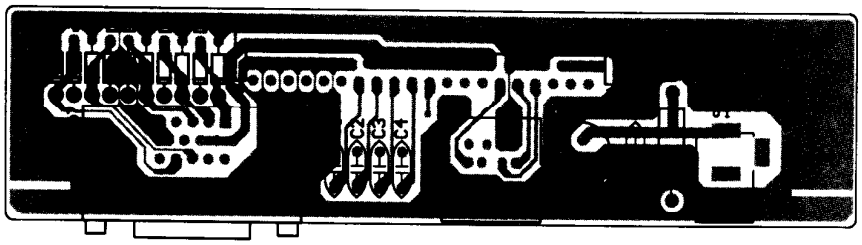
4-1-1 Control Panel Board

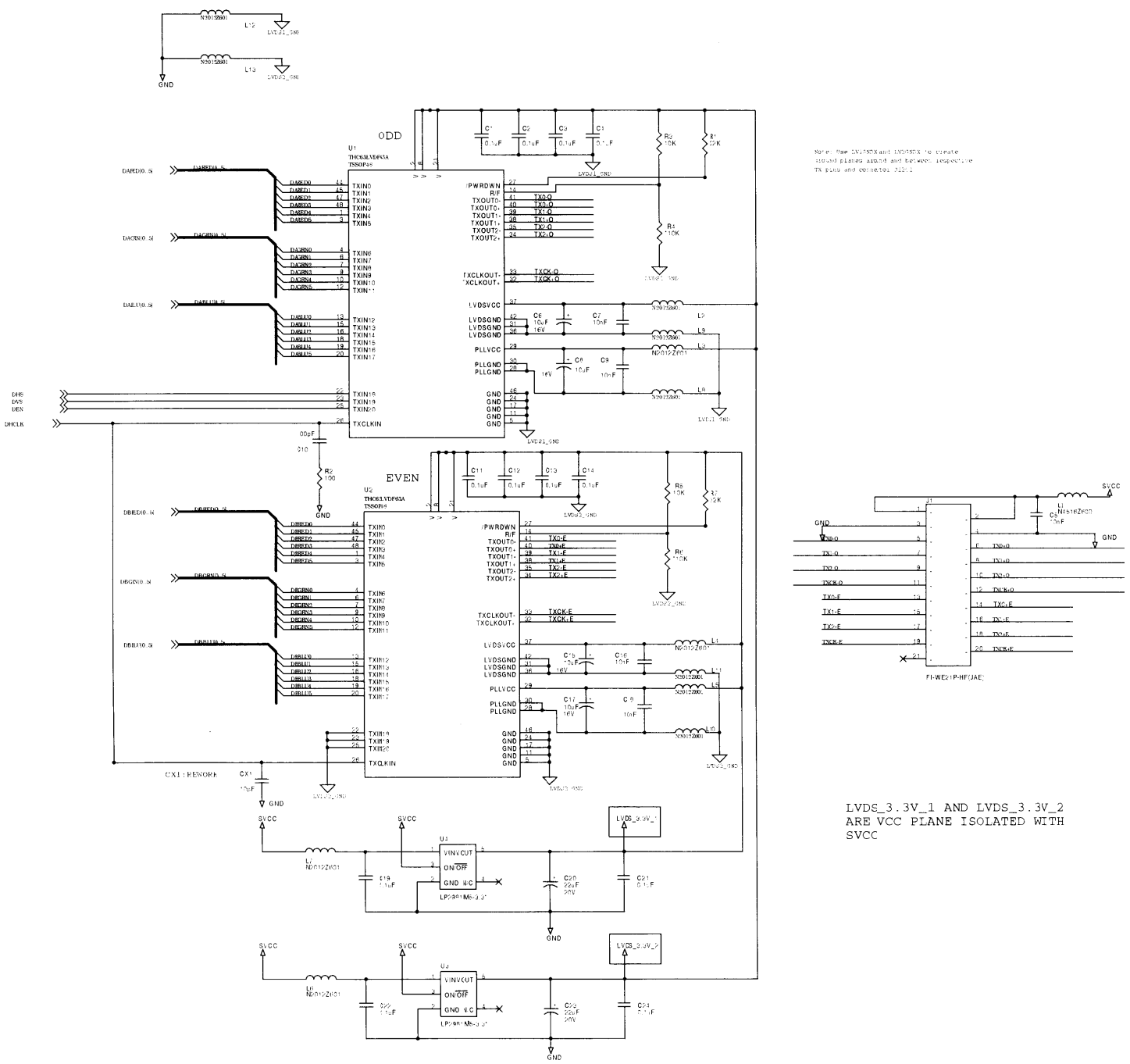


4-2-2 Connector Board



4-1-2 Connector Board



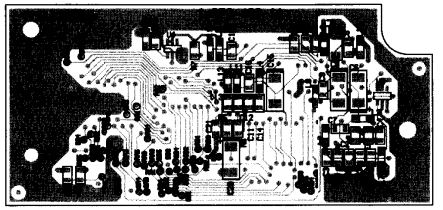


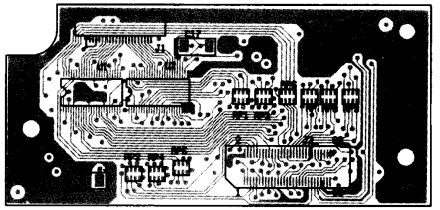
Note: Use LVDSNOX and LVDSNOX to create ground planes around and between respective TX pins and connector J1.

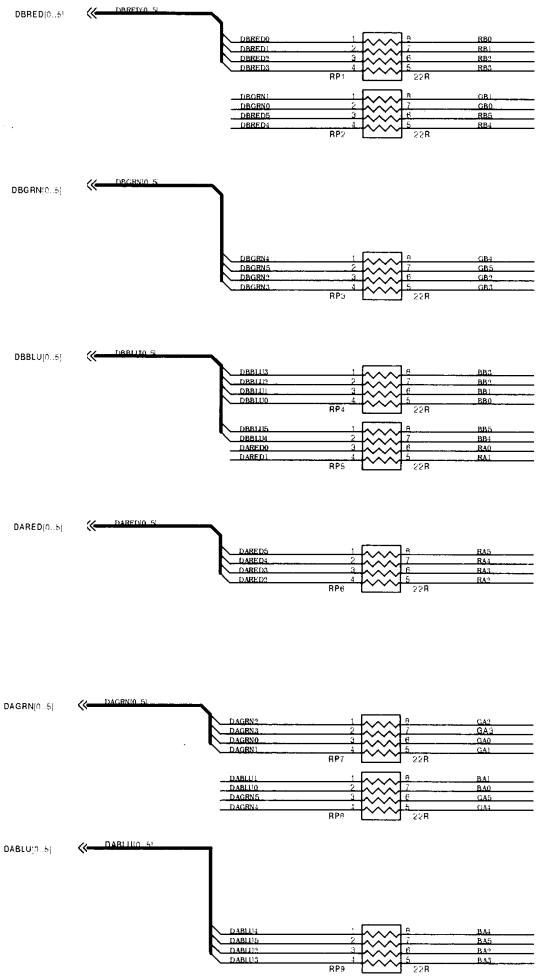
LVDS_3.3V_1 AND LVDS_3.3V_2
ARE VCC PLANE ISOLATED WITH
SVCC

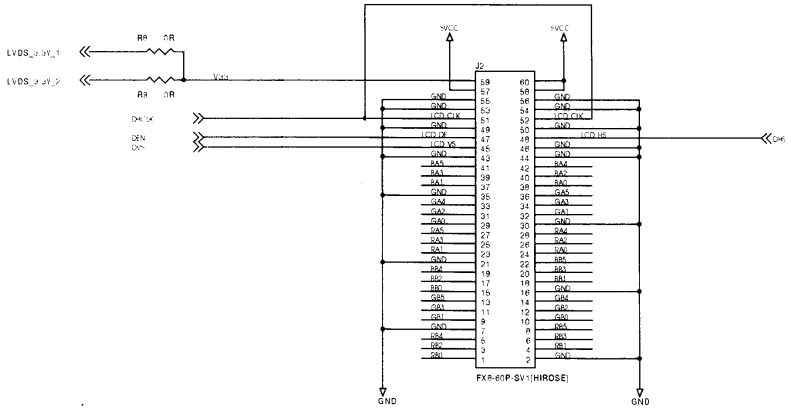
4-2-3 LVDS Board

4-1-3 LVDS Board

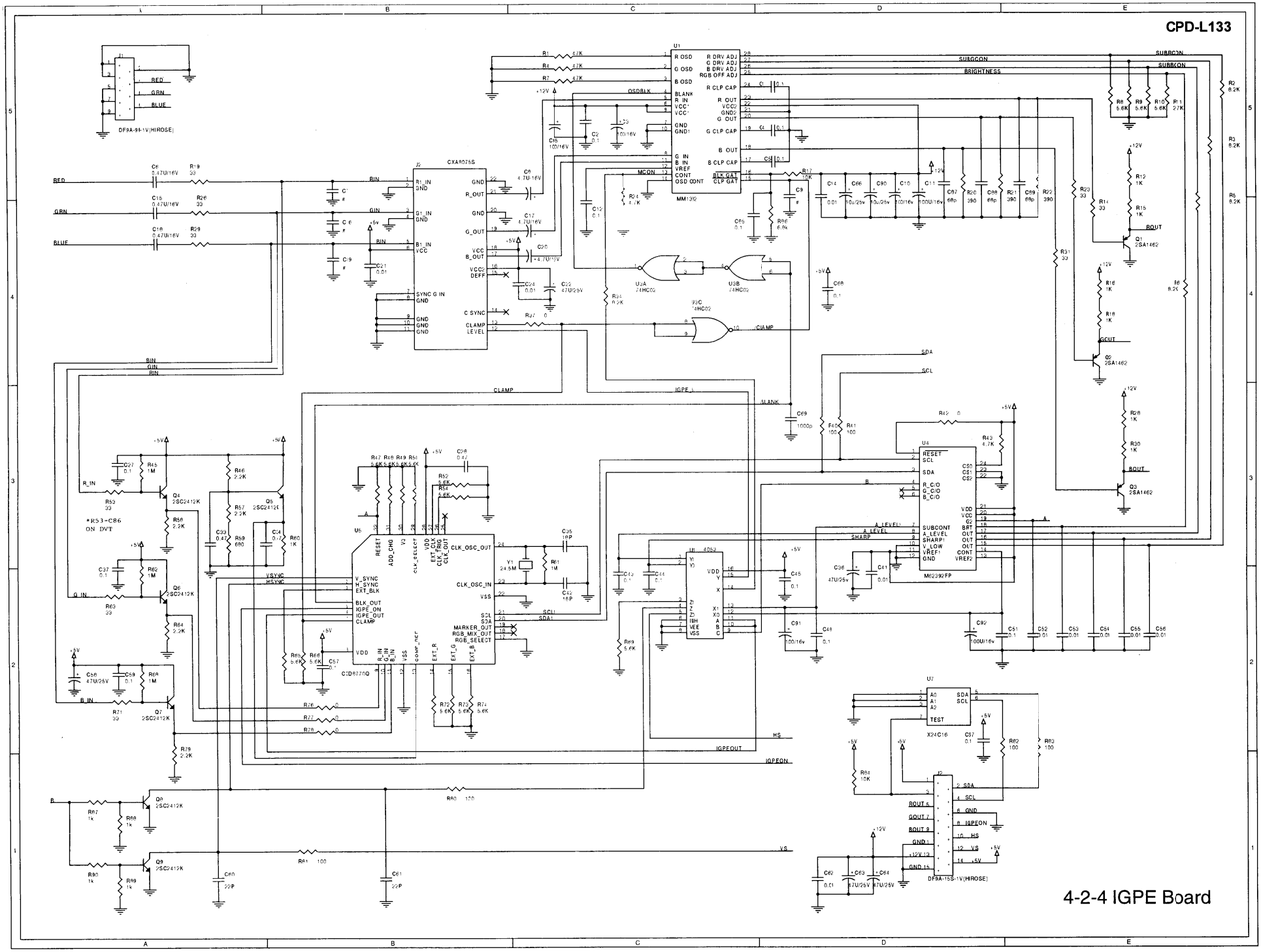




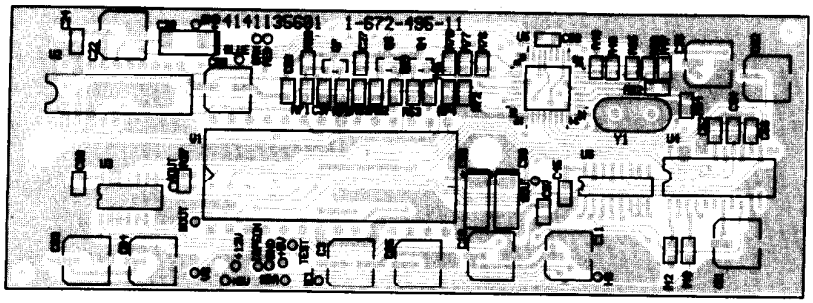


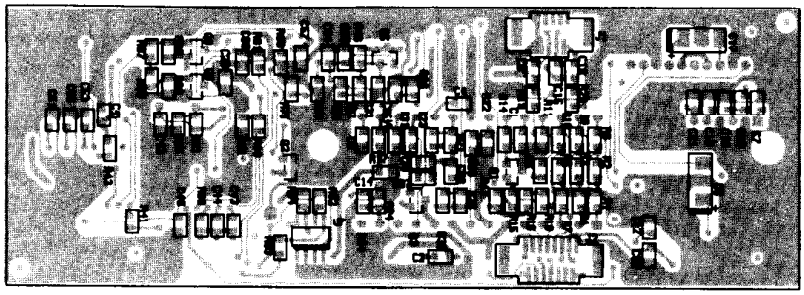


4-2-3 LVDS Board


CPD-L133
4-2-4 IGPE Board
RED
GRN
BLUE
DF9A-9P-1V(HIROSE)
CXA8075S
MM1392
M62392FP
CD8770Q
X24C16
DF9A-15S-1V(HIROSE)
SUBCON
BRIGHTNESS
SDA
SCL
CLAMP
BLANK
IGPE_V
IGPEOUT
IGPEON
HS
VS
/CLAMP
ROUT
GOUT
BOUT
*R53=CR6
ON DVT

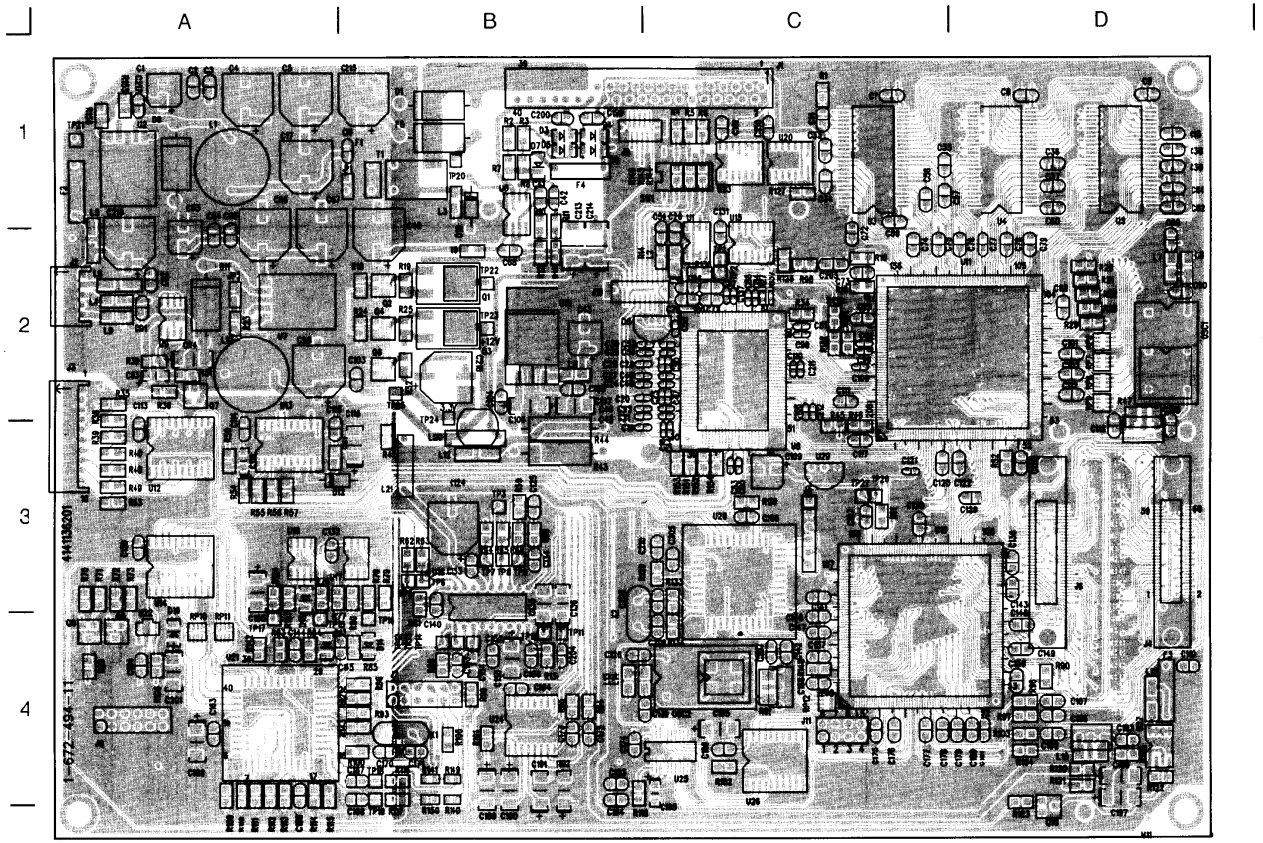
4-1-4 IGPE Board (Vaio Model Only)



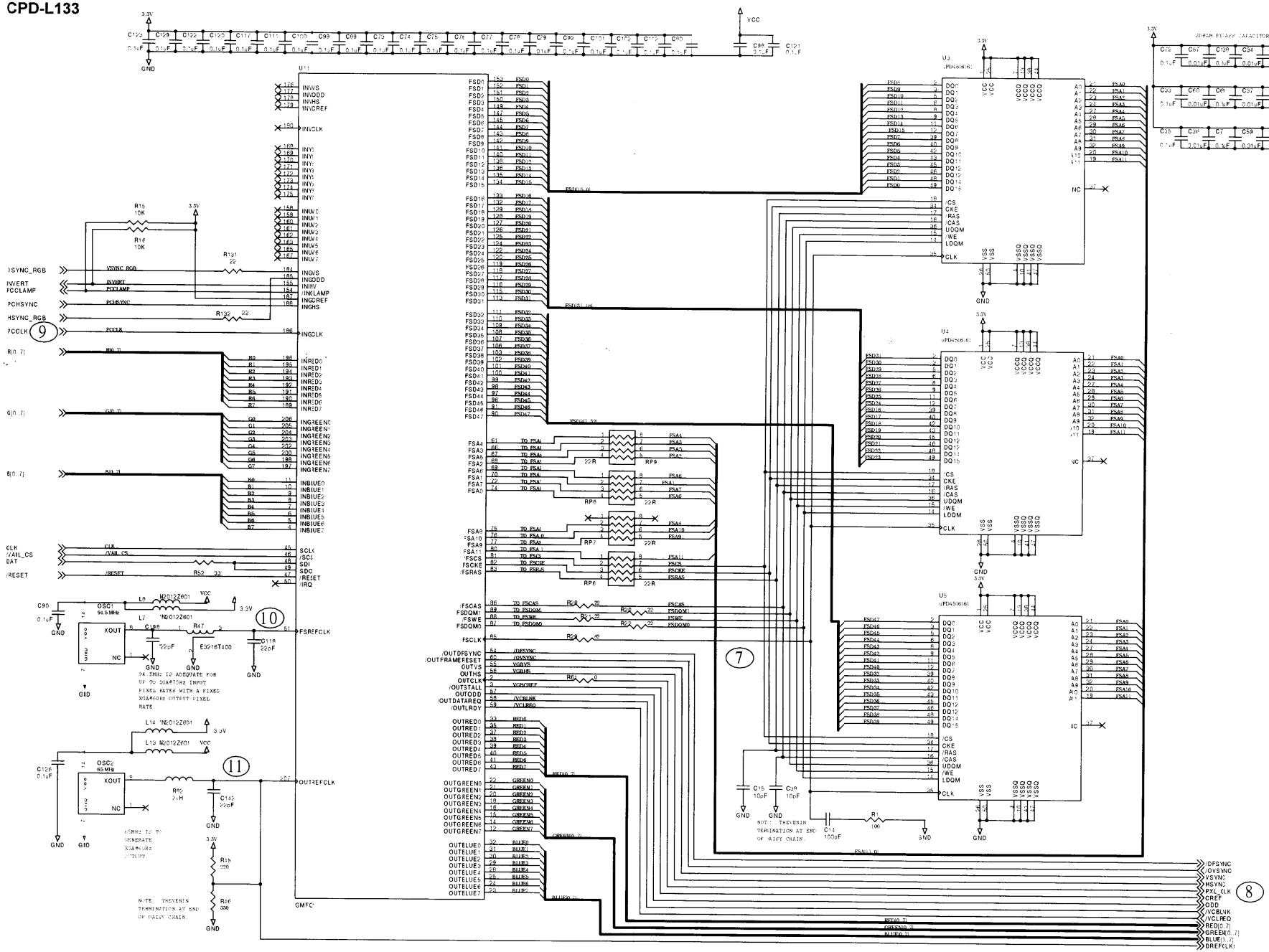


4-1-5 ControllerBoard

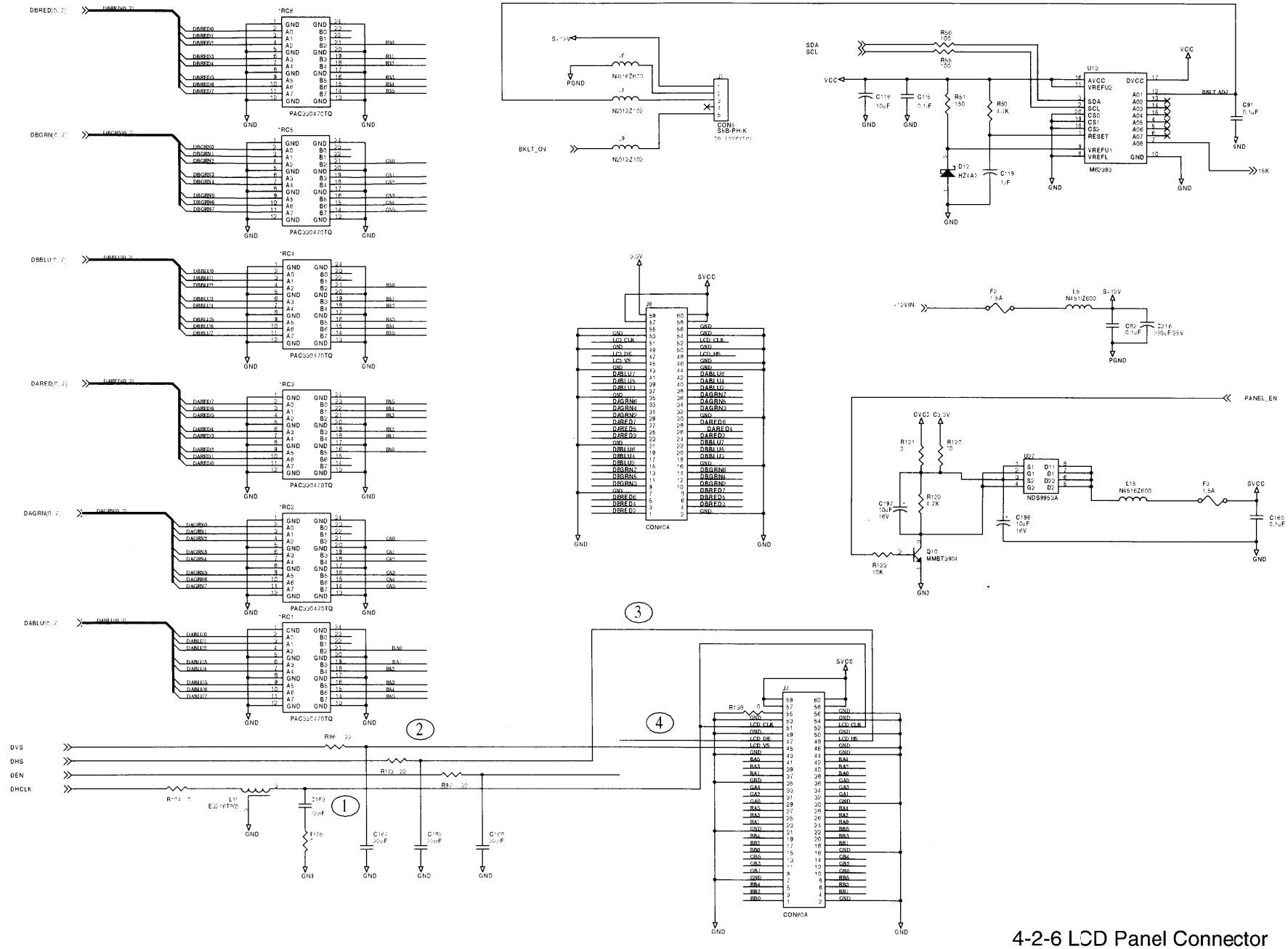
IC		DIODE	
U2	A-1	D9	A-1
U7	A-2	D11	A-2
U6	B-1	D1	B-1
U1	C-1	D2	B-1
U3	C-1	D10	B-1
U8	C-2	D3	B-1
U4	D-1	D4	B-1
U5	D-1	D5	B-1
U9	A-2	D6	B-1
U12	A-2	D7	B-1
U13	A-2	D8	B-2
U14	C-1	D12	A-3
U15	A-3	D15	A-3
U16	A-3	TRANSISTOR	
U10	B-2	Q1	B-2
U11	C-2	Q2	B-2
U20	C-1	Q7	A-2
U21	A-4	Q3	B-2
U23	C-1	Q4	B-2
U24	B-4	Q6	B-2
U18	B-3	Q8	A-3
U25	C-4	Q9	A-3
U26	C-4	Q10	D-4
U19	C-3		
U27	D-4		
U22	A-3		
U28	C-3		



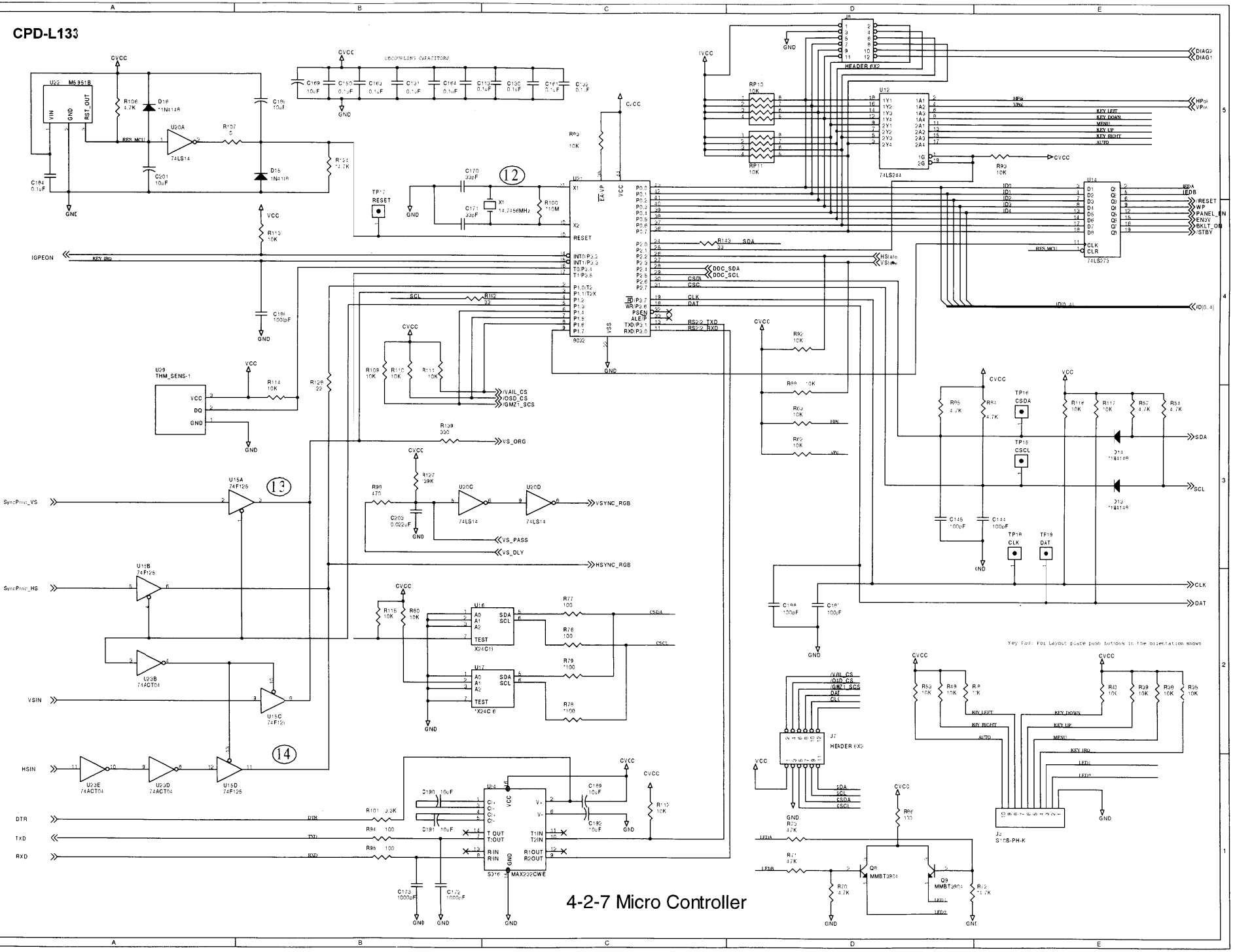
CPD-L133

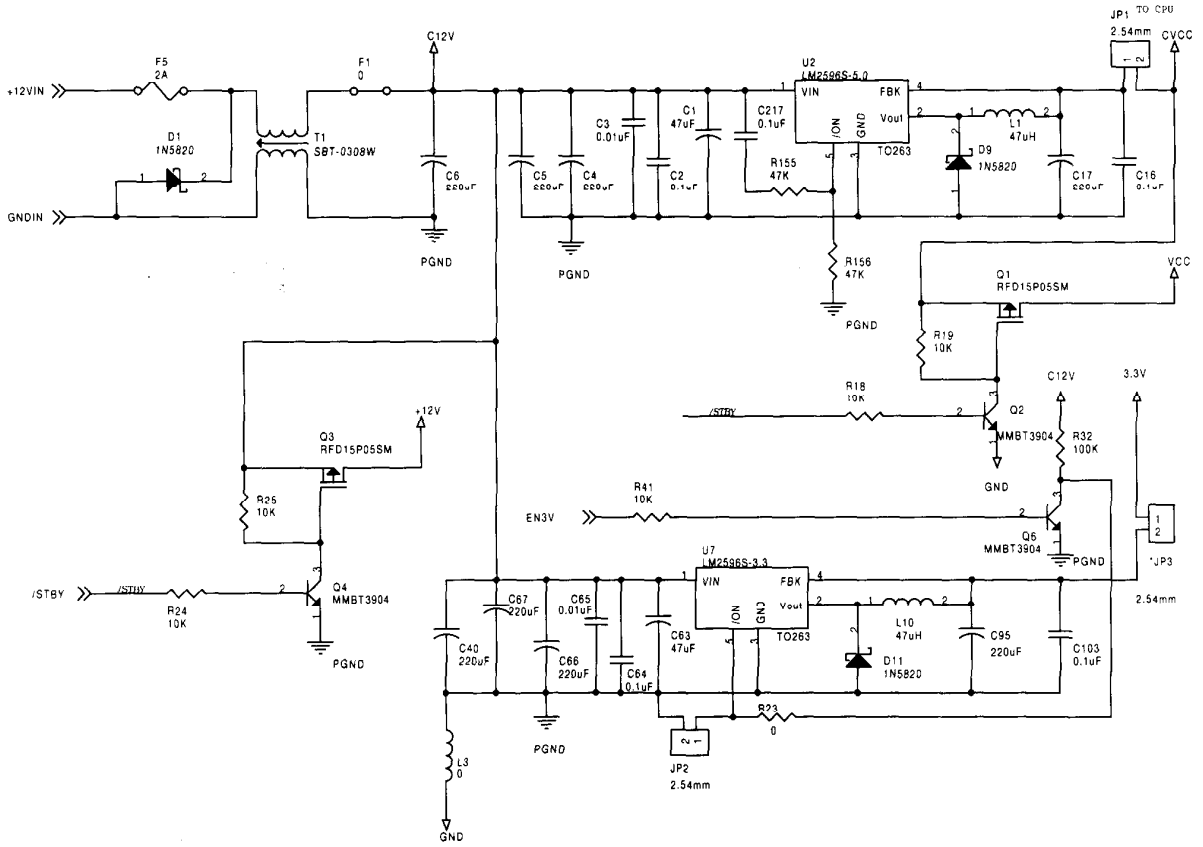


4-2-5 Gmfc 1 Frame Converter



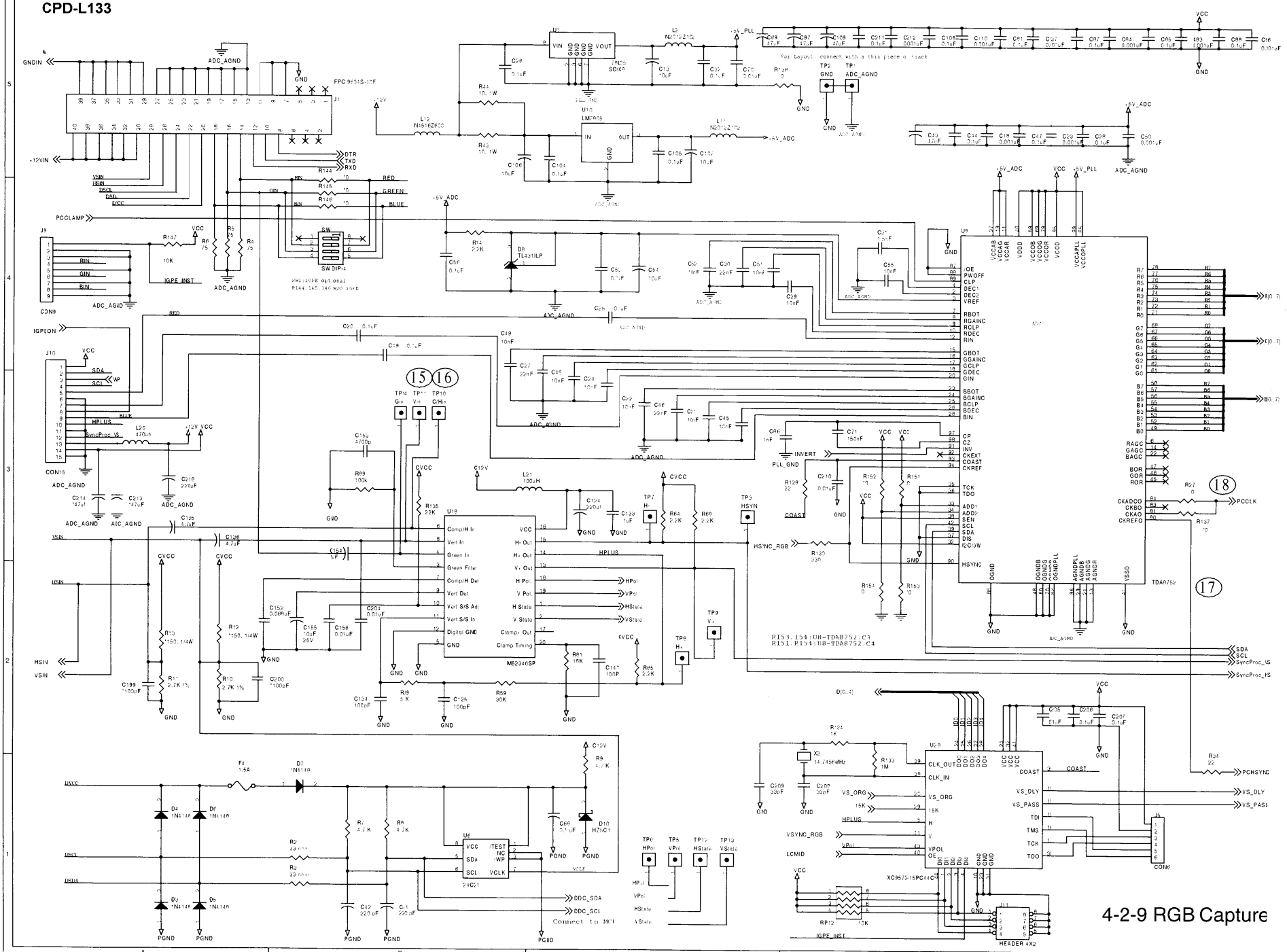
4-2-6 LCD Panel Connector

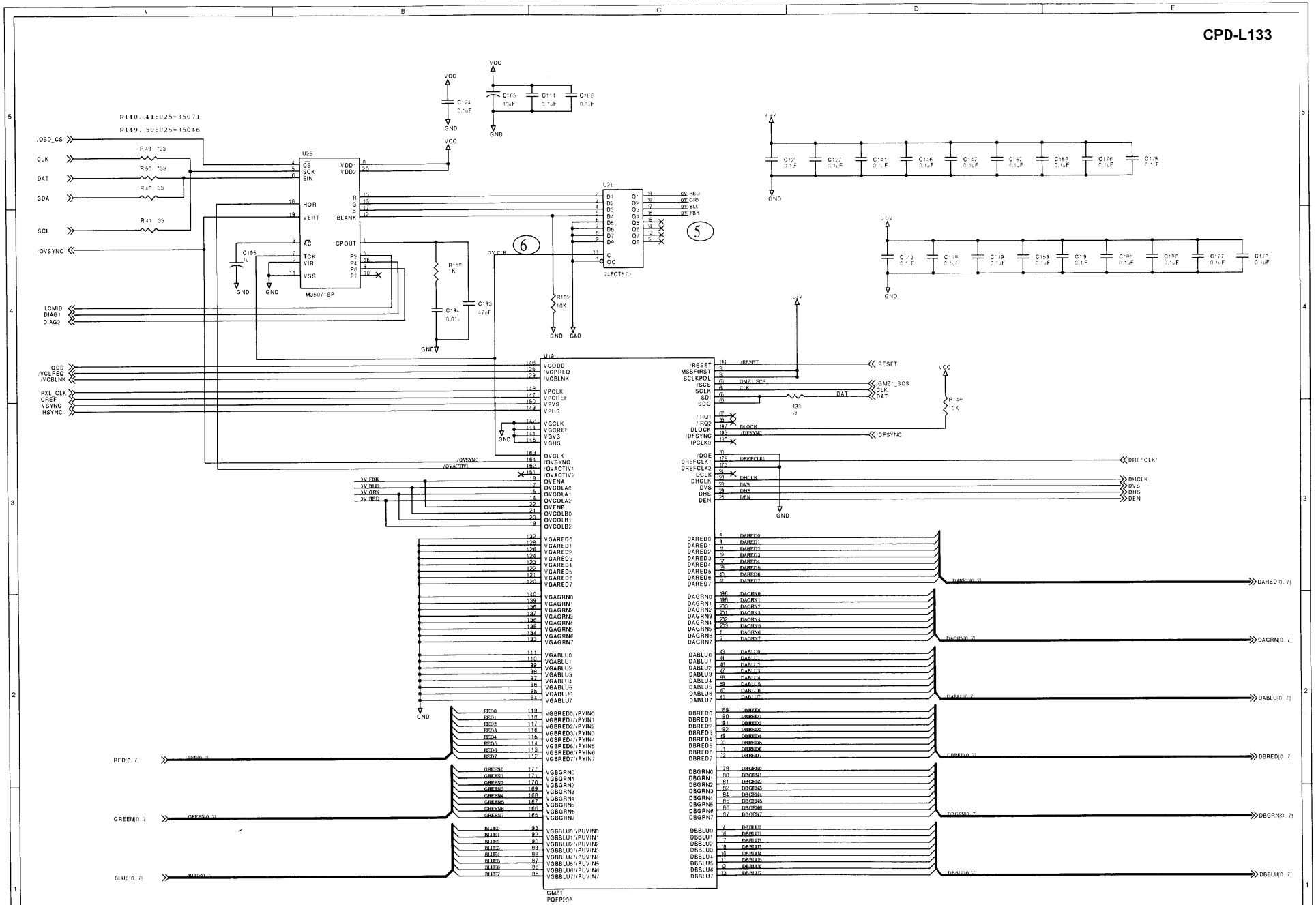

CPD-L133
4-2-7 Micro Controller


+12VIN
GNDIN
F5
2A
F1
0
D1
1N5820
T1
SBT-0308W
C12V
C6
PGND
C5
C4
C3
0.01uF
C1
47uF
C2
C217
0.1uF
U2
LM2596S-5.0
VIN
FBK
/ON
GND
Vout
TO263
R155
47K
R156
47K
L1
47uH
D9
1N5820
C17
C16
JP1
TO CPU
2.54mm
CVCC
VCC
Q1
RFD15P05SM
R19
10K
R18
10K
/STBY
Q2
MMBT3904
C12V
3.3V
R32
100K
GND
R41
10K
EN3V
Q6
MMBT3904
PGND
*JP3
2.54mm
Q3
RFD15P05SM
+12V
R25
10K
/STBY
R24
10K
Q4
MMBT3904
PGND
U7
LM2596S-3.3
C67
220uF
C65
0.01uF
C63
47uF
C64
0.1uF
C40
220uF
C66
220uF
L10
47uH
D11
1N5820
C95
220uF
C103
0.1uF
R23
0
JP2
2.54mm
L3
0
GND

4-2-8 Power

CPD-L133





4-2-10 Zoom Engine

CPD-L133

Controller board voltage list

Ref.	Pin No.	Vol.[V]
U1	1	5.0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	11.1
U2	1	11.2
	2	5
	3	0
	4	5
	5	0
U6	1	4.8
	2	0
	3	0
	4	0
	5	4.8
	6	4.8
	7	3.6
	8	4.8
U7	1	11.2
	2	3.7
	3	0
	4	3.3
	5	0
U9	1	11
	2	5.5
	3	11
	4	5.5
	5	11
	6	11
	7	11
	8	11
U10	1	10.5
	2	0
	3	5
U22	1	5
	2	0
	3	1.4
U15	1	4.8
	2	0
	3	4.2
	4	4.8
	5	4.3
	6	3.6
	7	0
	8	4.2
	9	3.6
	10	0
	11	3.6
	12	4.4
	13	0
	14	5

Ref.	Pin No.	Vol.[V]
U12	1	5
	2	5
	3	5
	4	5
	5	5
	6	5
	7	5
	8	5
	9	5
	10	0
	11	0
	12	0
	13	5
	14	5
	15	0
	16	0
	17	5
	18	5
	19	0
	20	5
U13	1	5
	2	5
	3	5
	4	0
	5	0
	6	0
	7	0
	8	0
	9	3.7
	10	0
	11	5
	12	0
	13	0
	14	0
	15	0
	16	5
	17	5
	18	0
	19	0
	20	0
U20	1	5
	2	0.1
	3	1.3
	4	0.1
	5	4.2
	6	0.1
	7	0
	8	3
	9	0.1
	10	0.1
	11	4.2
	12	0.3
	13	1.2
	14	5

Ref.	Pin No.	Vol.[V]
U14	1	5
	2	4.2
	3	5
	4	5
	5	0.1
	6	4.5
	7	5
	8	5
	9	4.6
	10	0
	11	0
	12	3.5
	13	5
	14	5
	15	3.5
	16	3.5
	17	5
	18	5
	19	3.5
	20	5
U18	1	4.9
	2	4.9
	3	4
	4	4
	5	0
	6	5.7
	7	0.8
	8	5.6
	9	3.3
	10	0.9
	11	0.7
	12	0
	13	0
	14	0.6
	15	2.9
	16	0
	17	1.7
	18	1.2
	19	1.5
	20	3.2
U27	1	5
	2	0
	3	5
	4	0
	5	5
	6	5
	7	5
	8	5
Q9	B	2.6
	C	3.7
	E	2
Q10	B	0.7
	C	0.1
	E	0

Ref.	Pin No.	Vol.[V]
U23	1	5
	2	0
	3	4.8
	4	0
	5	0.1
	6	5
	7	0
	8	2.8
	9	0.6
	10	0.6
	11	3.2
	12	5
	13	0
	14	5
U24	1	6.3
	2	8
	3	2.5
	4	4
	5	-3.1
	6	-6.6
	7	-6.3
	8	0.2
	9	5
	10	5
	11	0.8
	12	5.1
	13	0.2
	14	-7.2
	15	0
	16	5
Q1	G	0.1
	D	5
	S	5.1
Q2	B	0.6
	C	0.1
	E	0
Q3	G	0.1
	D	11
	S	11.3
Q4	B	0.6
	C	0.1
	E	0
Q6	B	0.6
	C	0
	E	0
Q7	B	0.6
	C	0
	E	0
Q8	B	2.6
	C	3.7
	E	2

Ref.	Pin No.	Vol.[V]
U25	1	1.2
	2	0
	3	5
	4	5
	5	5
	6	5
	7	1.6
	8	5
	9	0
	10	0
	11	0
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	0.4
	19	3.2
	20	0
U26	1	0
	2	0
	3	0
	4	0
	5	0
	6	0
	7	0
	8	0
	9	0
	10	0
	11	1.7
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	0
	19	0
	20	5
U16	1	0
	2	0
	3	0
	4	0
	5	5
	6	5
	7	0
	8	5

Ref.	Pin No.	Vol.[V]
U3	1	3.3
U4	2	2.7
U5	3	1.3
	4	0
	5	2.7
	6	2.7
	7	3.3
	8	1.5
	9	1.2
	10	0
	11	2.2
	12	0.9
	13	3.3
	14	0
	15	3.3
	16	3.2
	17	3.2
	18	0
	19	1.6
	20	0
	21	1.5
	22	1.5
	23	1.5
	24	1.5
	25	3.3
	26	0
	27	1.5
	28	1.4
	29	1.4
	30	1.3
	31	1.3
	32	0.4
	33	0
	34	3.3
	35	1.8
	36	0
	37	0
	38	3.3
	39	1.6
	40	0
	41	0
	42	1.5
	43	1.2
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	46	2.7
	47	0
	48	1.3
	49	2.7
	50	0

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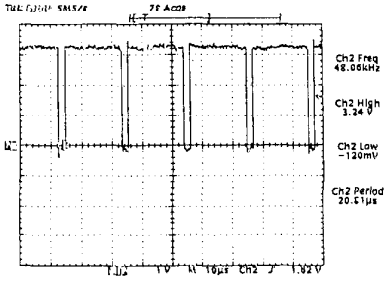

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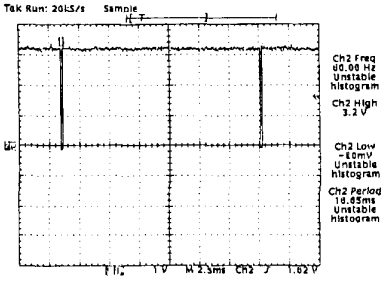

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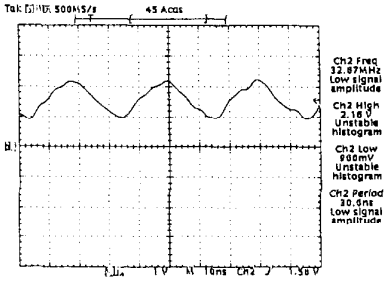

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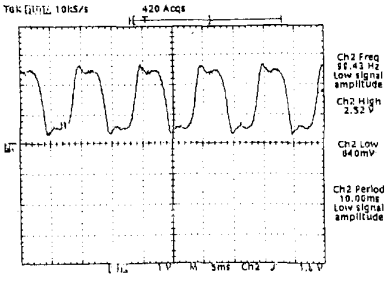

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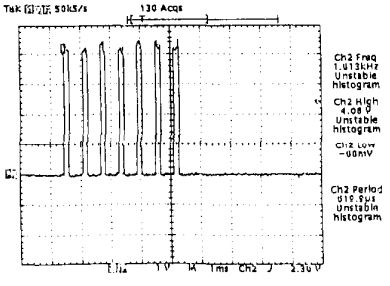

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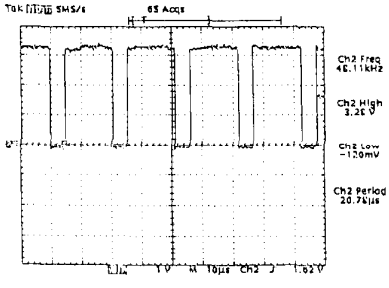

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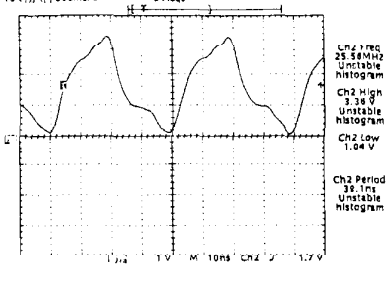

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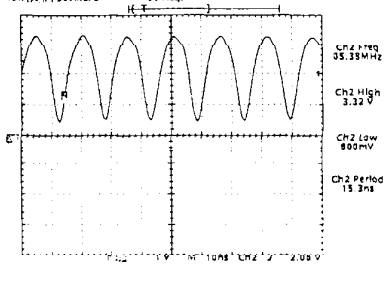

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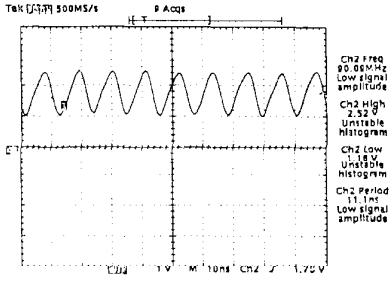

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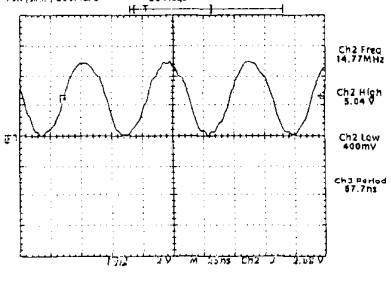

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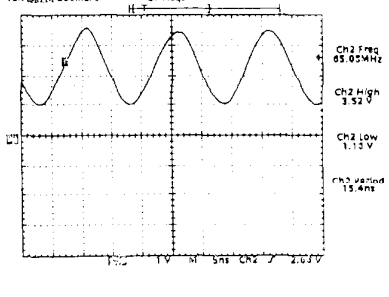

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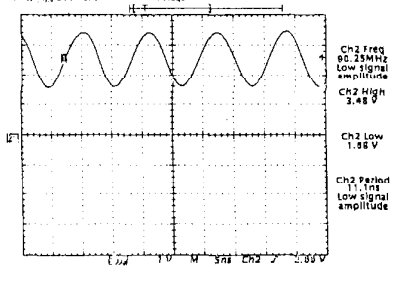

CPD-L133

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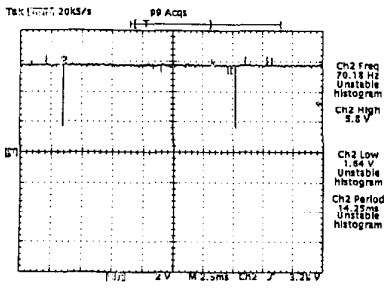

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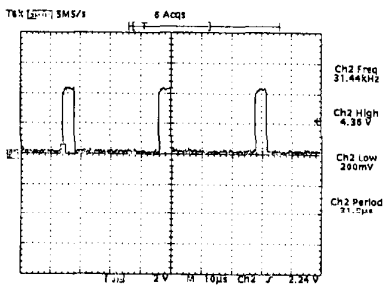

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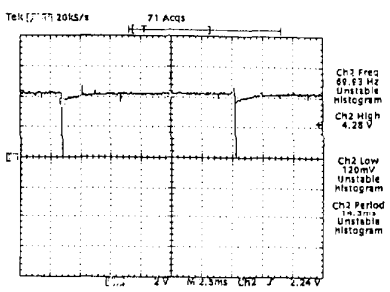

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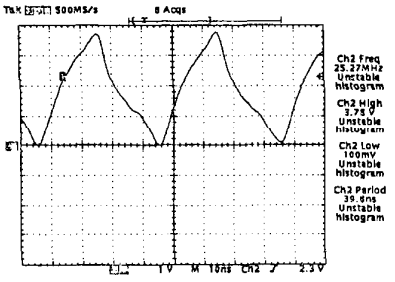

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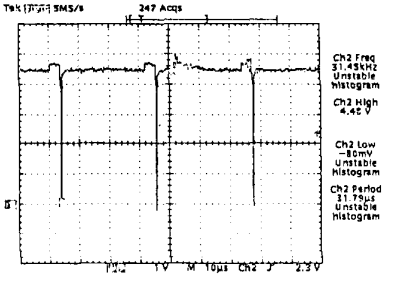

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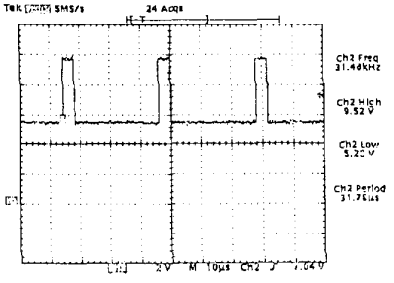

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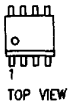

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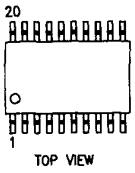

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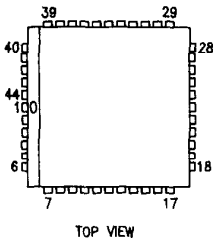

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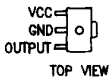

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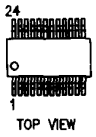

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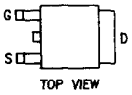

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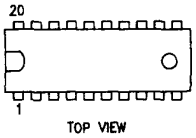

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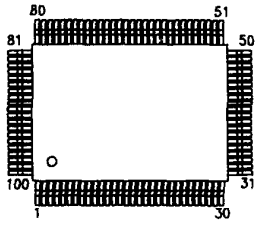

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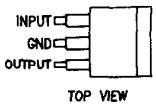

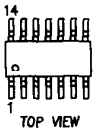

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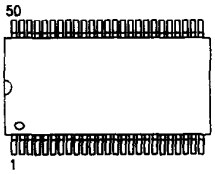

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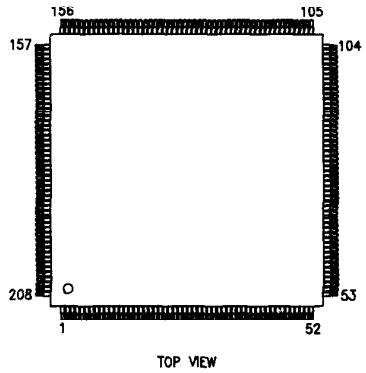
GMZ1



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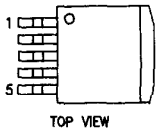
LM2596S-3.3



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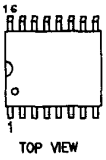

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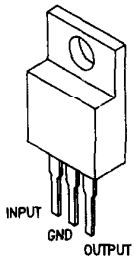

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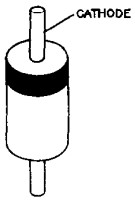

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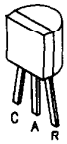
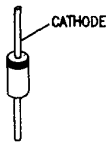


1N4148

HZ4A2
HZ5C1



SECTION 5
EXPLODED VIEWS

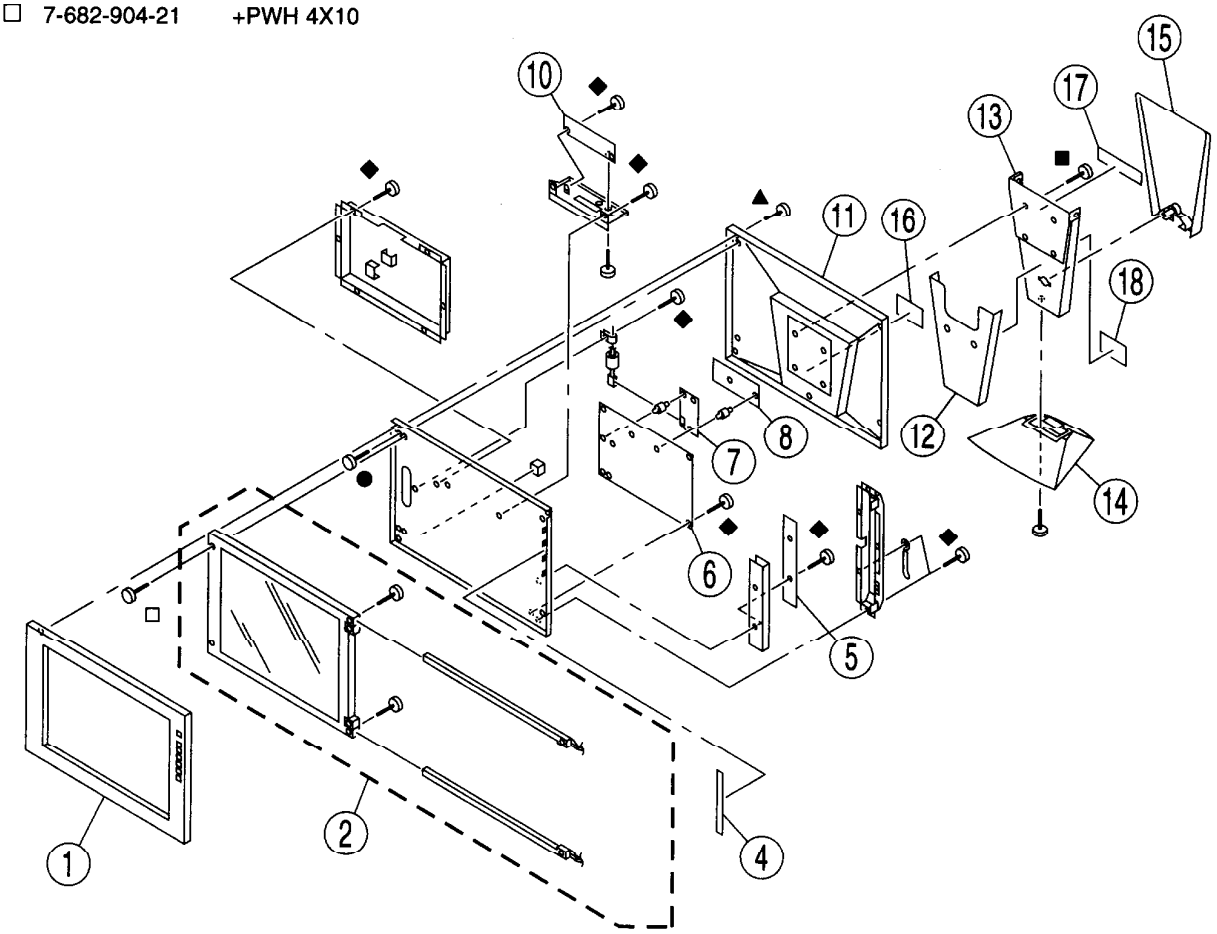
NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

5-1. CHASSIS

●	7-685-647-79	+BVTP 3X10
▲	7-685-650-14	+BVTP 3X16
■	7-682-162-01	+P 4X10
◆	7-682-145-01	+P 3X4
□	7-682-904-21	+PWH 4X10

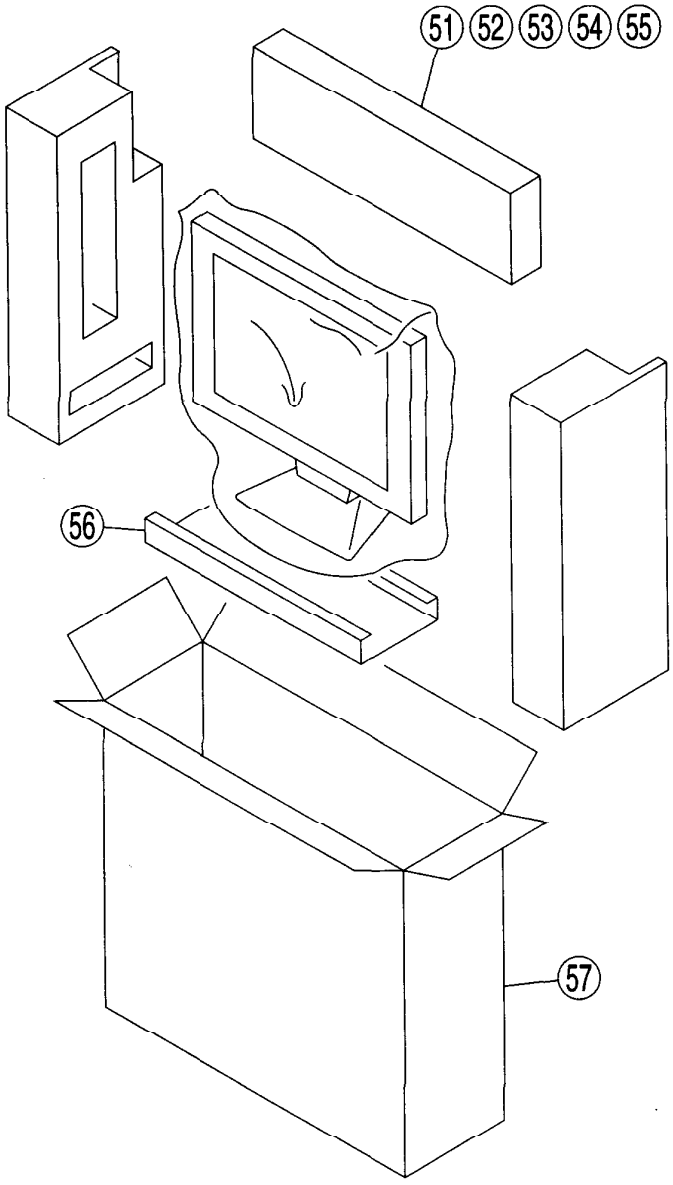


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	A-1015-958-A	BEZNET COMPLETE ASSY	
2	1-803-454-11	PANEL MODULE, LIQUID CRYSTAL I	
4	*A-1372-491-A	H BOARD, COMPLETE	
5	1-418-206-11	INVERTER	
6	*A-1294-474-A	A BOARD, COMPLETE	
7	*A-1294-477-A	A (LVDS) BOARD, COMPLETE	
8	*A-1342-457-A	V (IGPE) BOARD, COMPLETE	
10	*A-1388-218-A	J BOARD, COMPLETE	
11	A-1006-558-A	CABINET COMPLETE ASSY, BACK	
12	4-064-501-01	COVER, ARM	
13	4-064-513-01	HINGE	
14	A-1501-316-A	STAND SUB ASSY	
15	A-1005-348-A	COVER COMPLETE ASSY, REAR	
16	4-068-418-01	LABEL (B), INFORMATION	
17	*4-064-521-01	LABEL, CONNECTOR	
18	4-068-417-01	LABEL (A), INFORMATION	

5-2. PACKING MATERIALS

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	A-1005-348-A	COVER COMPLETE ASSY, REAR	
52	⚠1-765-718-11	CORD, POWER (U/C Model)	
	⚠1-765-719-11	CORD, POWER (AEP Model)	
53	1-475-803-21	ADAPTOR, CONVERSION	
54	1-783-726-11	CABLE, SIGNAL	
55	3-862-673-03	MANUAL, INSTRUCTION	
56	*4-064-988-01	CARTON, CONNECTION	
57	*4-067-949-01	INDIVIDUAL CARTON	